REMARKS

ON

IRRITATIVE FEVER,

COMMONLY CALLED THE

Plymouth Dock-Yard Disease;

WITH

MR. DRYDEN'S DETAILED ACCOUNT

OF THE

FATAL CASES,

INCLUDING THAT OF THE LAMENTED SURGEON,

DR. BELL;

Dedicated, with Permission, to

COMMISSIONER SHIELD,

BY

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DEVONPORT:

PRINTED BY CONGDON & HEARLE;

FOR UNDERWOODS, FLEET-STREET, LONDON; BLACK, EDINBURGH; AND MACARTHUR, DUBLIN.

1825.

TO

WILLIAM SHIELD, ESQ.

COMMISSIONER

OF HIS MAJESTY'S ROYAL NAVAL YARD,

AT DEVONPORT,

&c. &c. &c.

SIR,

Presiding as you do, over one of the most important Naval Arsenals in Great Britain, it has been no less your wish, I am well assured, than your duty, to regard with interest, the health of that respectable class of Artificers, who have invariably distinguished themselves, under your command, for industry, ingenuity, talent, and good conduct.

The subject of the following pages struck such a panic amongst them during the last summer, that I feel a pleasure in sending forth to the world an explanation of it, under the sanctioned auspices of your name.

Be pleased, Sir, to accept this public token of respect, with which,

I have the honor to be,

Your very obedient and humble Servant,

JOHN BUTTER.

8, *George-street, Plymouth,*
1*st June,* 1825.

Also published,

BY THE SAME AUTHOR,

AN ADDRESS

ON THE

PLYMOUTH EYE INFIRMARY,

1821.

PREFACE.

THE Public will understand, that I have never been professionally connected with the Naval Yard at Devonport.

I was travelling in Wales, last summer, with a much valued relative, when a most unprecedented fatality attended the disease which forms the subject of the following pages.

From the erroneous and exaggerated statements contained in the newspapers respecting it, as well as from the local reports prevailing on my return to Plymouth, I was led to infer that the disease was either Locked-Jaw, *(Trismus,)* a modified species of Plague,* or a malady altogether anomalous and new in its character.

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* See Morning Herald Newspaper between the 20th and 30th of September, 1824.

The enquiries, made from distant places, led me at last to wait on Mr. DRYDEN, the Assistant Surgeon, who by this time had become the principal medical officer in the Establishment, and who frankly and fully communicated to me the most authentic information respecting the disease; kindly shewing to me also the last case which occurred.

Considering the subject to be of great importance to the Medical Profession, inasmuch as such a series of cases might not again occur, and filling at the same time the office of Secretary to the *Western Medical and Chirurgical Society**, of which I have been since

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* No efforts have been heretofore made, so far as I am aware, previous to the institution of this Society, to collect together such useful facts and interesting histories, as must frequently occur in a medical practice, extended amongst a population advancing towards 80,000 persons. This Society has, therefore, been established for a double purpose—

1st. In order to procure the newest medical information published in the Journals, &c. of this country:

2dly and principally, with the view of collecting local intelligence worthy of record.

The last of these two objects can only be promoted in proportion to the zeal and assiduity evinced by its members, for the acquirement of knowledge and the good of science. Considerable progress has been, however, made in furtherance of this

elected the President; I thought that a history of the disease might form an interesting topic of conversation for its members, especially as the chief object of this Society is to collect local intelligence; and I therefore requested Mr. DRYDEN to furnish me with a detail of the cases, upon which I ventured to offer some explanatory remarks.

The enlightened discussions which ensued at several successive meetings of this Society, (the only one of the sort, I believe, established in the West of England,) led me to suppose that the cases merited further publicity. In order, therefore, to render them as correct and full as possible for the public eye, Mr.

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last object, by the members of this Society; and it is hoped that time will shew the fruits of their labours.

There are two ways of pursuing the medical profession;—

1st.—As a business of routine and profit.

2nd.—As the means of scientific research.

It is to be regretted that these two objects are so seldom combined; for the man of gain troubles his reflections no further after the event has passed, whilst the contemplative and scientific enquirer studies the philosophy of the science, with a view to improvement, neglecting emolument as a something remote from his views, and directing his exertions rather to the means of benefiting mankind than of enriching himself.

Dryden and myself subsequently waited upon the widows and friends of the deceased artificers, and with their testimonies, added to those of medical men, who had seen any of the patients, we hope to have rendered the histories as accurate and substantial as the most frequent revision and care could possibly have made them.

It is true that the cases were not originally noted down with any view to publication; but still they afford the most authentic information which could have been supplied on the subject; and when it is considered that the Public made several demands on the Medical Profession of this neighbourhood, for an account of this disease, it is hoped that a favorable construction will be put upon the efforts of those persons, who now come forward with that information, which they believe to be correct, in order to satisfy those demands, and to set the subject in its proper light. The public anxiety, therefore, has rendered the present attempt, however imperfect it may be considered, both necessary and useful.

Some minutiæ might have been kept back, either intentionally, ignorantly, or fearfully, by the parties concerned; but the ge-

neral outline of the facts cannot be mutilated by trifling omissions, nor can the truth of the histories be impeached by frivolous alterations; for if ever a body of evidence was conveyed into a court of justice sufficiently clear to take away a criminal's life, surely there is information enough in these pages, and that is all that can be required, either to establish or confirm a few medical points of practice, the improvement of which has been the chief object in their publication. Truth has never been out of view, nor have any pains been spared in attaining the truth.

To the candid and enlightened enquirer this explanation is due—to the sceptical and cavilling no further apology will be offered.

Delays have unavoidably arisen, chiefly from a want of type, as it is the first work of the kind, I believe, ever printed in the town; but other impediments have also sprang up. A Medical Practitioner, who has frequently to ride long distances into the country, cannot always find it easy or convenient to prepare and arrange matter for publication during those hours which should be devoted to his rest, especially without a good medical library for reference, and with numerous other subjects dividing his thoughts and time.

This apology, I hope, will excuse the literary imperfections of the work, and direct the mind rather to the matter than to the manner in which it has been arranged.

With respect to the remarks, little need be said. They must rest on their own basis; but without them the cases might have appeared less perspicuous in some parts.

The remarks are, of course, intended as deductions from the facts put into my possession; but whether or not they be such as the evidence warrants, or intrinsically of any value, the Profession must determine.

I might, perhaps, have erred in calling this the "*Dock-Yard Disease*," but by that appellation it was designated throughout the country; and therefore the popular term was retained until the investigation enabled me to apply the technical phraseology of "*irritative fever*." Before this time, the disease, medically considered, was both nameless and causeless. I have therefore ventured to baptise and to refer it to its true sources.

In regard to the treatment, I have been more successful, by pointing out that which proved to be inefficient, than by substituting

other means less fallible; for there is no treatment, however judicious—no remedy, however certain, which may not be occasionally perverted by misapplication and abuse.

A more important subject could not have been agitated, than the dependence of local irritation on constitutional causes, and *vice versâ*, in the manner so ably laid down by Mr. ABERNETHY;* and if I have failed in giving a right exemplification of this connection, I shall feel, nevertheless, that I have been instrumental in bringing before the Medical Profession a mass of evidence, worthy of their most serious attention; knowing that the only credit due to myself is that of having rescued so many valuable and important facts from that oblivion, to which they had been consigned, *unâ voce*, before these enquiries were commenced on the subject. And if I have not conducted the enquiry with that ability which might have been expected, I have the consolation, at least, to know, that no other person was inclined to attempt it; and that, therefore, I have not kept abler persons from elucidating the disease.

* On the constitutional Origin and Treatment of local Diseases.

The investigation was free for all; and if others wanted either the time or the inclination to prosecute it, surely it was open to a person who could command both. The present work, therefore, must be considered as an honest endeavour to explain the nature of a disease, which seems not to have been sufficiently contemplated by the Profession, and to elicit fuller reports respecting it.

The course pursued has been to get the clearest facts, to draw the most obvious and inevitable conclusions, to consider well the relation of cause and effect, and ultimately to recommend that treatment, which the consideration of the past, and the importance of future experience, seemed to justify:

*Præterita discere, præsentia noscere, futura prædicare, oportet.**

I hope, therefore, that the following pages will prove interesting to Medical Men, and satisfactory to the Public at large.

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* Hippocrates Epidem. lib. 1. tom. 9.

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CORRIGENDA.

PAGE	LINE	
89	28	for *onguet* read *tongue*.
118	21	for *intervened* read *supervened*.
121	27	for *adze* read *adz*.
129	13	for *Rubeolo* read *Rubeola*.
135	30	for *glettis* read *glottis*.
151	10	for *chemical* read *physical*.
163	13	for *inhabited* read *infested*.
286	8	for *until* read *since*.

REMARKS

ON THE

Plymouth Dock-Yard Disease,

&c.

Case 1.

WILLIAM COWLE, æt. 45, shipwright, St. John-street, Devonport, generally healthy, and temperate in living—of a spare habit, and middling stature.

1824. August 1st. Was laid up from his duty in consequence of a punctured wound, received some days since, in the sole of his left foot from a small nail, which ran through his shoe. The wound is now inflamed and painful. Cataplasms of oatmeal* boiled in

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* This form of poultice, or that of bread and water, it should be understood, was generally used for the following patients, when none other is specified.

water were applied, and the following cathartic pills given :—

℞ : Ext. Colocynth : comp : gr. viij.
Hydr : submur : gr. iij. Confect : q : s : m :
Fiant pilulæ duæ.

2d. Pain increased, and inflammation extending over the arch of the foot; the original puncture being enlarged, gave exit to some pus. Purging mixture taken, agreeably to the subjoined formula :—

℞ : Infusi Sennæ *(Ph : Lond :)* ℥ ij.
Magnesiæ sulphatis ℥ i.
Aquæ ℥ vi. m. f. mistura,
Cujus capiat quartam partem, pro re nâta.

3d. In the course of the night, a piece of leather, which had been forced in by the nail, was discharged with the poultice. He now felt easier. Bowels freely opened; tongue clean; pulse about 80, and soft. Cataplasms and cathartic mixture continued.

4th, 5th, and 6th. The reports were favourable. Continued his mixture occasionally.

7th. Considerable fever came on, and inflammation extended up the leg, which is painful. Pulse 100, and easily compressed; much head-ache, nausea, and thirst. He was blooded to 16 ounces. Syncope produced.

Cataplasms applied to the foot, and evaporating lotions to the limb. He continued the cathartic mixture.

8th. Blood buffed, bowels open, head-ache relieved. Bleeding repeated to 10 ounces. Fainting prevented the further loss of blood. Continued the cathartic medicines and topical applications.

9th. He fainted frequently during the night; pulse quick and feeble; the whole limb much enlarged and erysipelatous. Cataplasms were applied to the foot, and evaporating lotions to the limb. Calomel, antimony, and opium, given with confection in boluses. Cathartic mixture continued.

10th and 11th. Boluses of calomel, opium, and antimony, continued.

12th. Erysipelas extending up the thigh; great prostration of strength; pulse quick and feeble. Lotions omitted; cataplasms substituted over the whole limb. Fomentations of chamomile flowers and poppy-heads were ordered; bowels kept solvent by an infusion of senna, Epsom salts, and tartarised antimony.

13th. The whole limb to the groin has gradually and progressively enlarged; its size excessive. Medicines as yesterday.

14th. Erysipelatous tension and tender-

ness exist over the abdomen; breathing oppressed; pulse 130, weak and irregular. Opium, camphor, and aromatic confection, ordered in boluses; and spt: ammon; aromatic, with spt: lavand: comp: in mint-water, frequently.

15th. Singultus; extremities cold; pulse scarcely perceptible; bowels confined. Castor oil and tincture of senna given.

2 o'clock, P. M. Carbonate of ammonia and wine frequently; blisters to the abdomen; dissolution approaching. Died in the night perfectly rational nearly to the last. Body not examined.

REMARKS.

In this case we have to consider whether or not the puncture received in his left foot from a nail, which is said *not* to have been rusty, with the presence of the leather around it, was the primary cause in producing the erysipelas and fever, of which there can be no doubt, that he died on the 14th day after the accident, or in seven days after the accession of fever? And if this question be answered, as I think it must be, affirmatively, then two considerations present themselves.

1st. Whether the nail or the leather were armed with any and what poisonous subtance capable of producing, in a healthy person, the train of consequences observed in Cowle?

2dly. Or whether there existed in him a morbid habit, or Diathesis, not previously suspected from his general appearance of health, which Diathesis was favourable to the progress of fever and to the accompanying erysipelas, of which it is evident that the nail and leather were the exciting cause? And if such a habit of body be suspected, a question may arise whether or not any other kind of puncture, made in a different part, might not have led to corresponding effects?

It does not appear, however, that the vein, punctured with a lancet, in the arm, became inflamed, nor that any unpleasant result followed that operation.

The idea of any poison remaining on the nail, after its passage through the leather of his shoe, is improbable; and it is equally vague to suppose that the leather itself was poisonous.

The blood exhibited a coriaceous surface. The first bleeding produced syncope, and the second fainting, which continued during the night, although 10 ounces only were taken. The pulse, too, acquired a quick and feeble character, which it never lost.

The erysipelas was not checked by the loss of blood. It commenced on the 7th day after the local injury, spread up the thigh gra-

dually to the groin and abdomen, after venesection, and terminated its career with the life of the patient.

It is to be lamented that no examination of the body, after death, was allowed, and that neither the state of the vessels of the affected limb, nor of the abdominal viscera, could be ascertained; but these seeming deficiencies, in the history of this case, will be supplied, in some measure, it is hoped, by the dissections of the other men.

Case 2.

John Henwood, æt. 50, house-carpenter, working as a sawyer, and residing at Millbrook, dark complexion, robust, and healthy.

On the 4th of August, 1824, received a slightly lacerated wound on his right hand by a saw. Cataplasms applied. Cathartic pills and cathartic mixture,* taken immediately.

5th. Easy.

6th. Reported unable to attend the surgery, and, on being visited, was found labouring under considerable fever. Pulse about 120, strong and incompressible; severe headache and thirst. The whole hand much inflamed. Blooded to 34 ounces; cathartic pills given, and compound powder of jalap.—*(Ph: Ed:)*

* The cathartic pills and mixture, directed in the foregoing formulæ, may be considered as those which were generally employed in the Dock-yard, when a difference is not otherwise expressed.

7th, 8th, and 9th. Fever abated, cataplasms continued, and fomentations ordered.

10th. Continues better, but the whole arm is much swollen and erysipelatous; an obscure fluctuation was perceived on the back of the hand, from which, on being opened, pus could be pressed out as from a sponge. Calomel, opium, and antimonial powder, given with confection in boluses.

11th. The tumefaction of the hand much reduced. Anodyne bolus continued, and fomentations of poppy-heads and chamomile flowers.

12th. The wound on the hand discharging freely pus and membranous sloughs. The arm very painful; pulse rapid, but soft; tongue clean and moist. Cataplasms, fomentations, and boluses continued.

13th. Made an opening on the fore arm, which discharged a quantity of pus and sloughy matter.

14th. Medicines continued.

15th. Made another opening on the back and inferior part of the humerus, which discharged about eight ounces of pus.

16th. The pain and tumefaction of the arm much reduced; the discharge very free, with quantities of sloughy matter. Bark given, with diluted sulphuric acid.

17th. Fever much abated; supported the arm with a bandage leaving the apertures

clear, to which poultices were continued. Wine given; bark, &c. repeated.

18th. Better—matter could be pressed along the humerus, from behind the scapula. The auxillary glands not affected. Cathartic mixture taken occasionally.

19th and 20th. Improving.

26th. The hand and fore arm nearly sound, and the discharge from the humerus much lessened; complains of pain in his left leg and thigh, which are œdematous, but not discoloured.

September 1st. The left thigh very painful; body much emaciated; fever increased. Bark omitted; anodyne bolus given at night, and cathartic mixture occasionally; fomentations and soap liniment ordered.

3d. Symptoms as above; pulse about 130, and weak; tongue moist; no appetite. Fomentations continued.

7th to 10th. Fluctuation of matter became gradually perceptible in different parts of the left thigh, to which cataplasms were applied. His strength was much exhausted.

12th. The propriety of opening the limb doubted, from his excessive debility.

15th. By Dr. Bell's consent, an incision was made a little above the patella, and another on the posterior part of the thigh, from which was discharged an immense quantity

of well-formed pus; he bore the operation well. Wine and opium continued.

16th. Discharge very profuse; the tension and pain of the limb much relieved.

18th. Feels more comfortable, but evidently loses ground. Medicines, &c. repeated.

20th. A slough formed on the lower part of the sacrum, and excoriations in several places over the spine. Cataplasms of yeast were applied.

25th. A large slough separating from the back part of the thigh. Bark, wine, and opium, continued.

October 2d. Debility so great that it is with much difficulty he can be moved to apply the dressing; gangrene commencing on the right heel. He lingered until the 11th, when he sank one of the most miserable objects ever beheld. Body not examined.

REMARKS.

It should appear that John Henwood, a robust and healthy man, slightly lacerated his right hand with a saw—an accident by no means unfrequent in our naval yard—and, from the numerous examples of similar injuries which do well, no unpleasant, still less fatal, consequences were anticipated. But there was no other external injury apparent at the time in any other part of his

body; and therefore whatever consequences ensued, fatal as they proved, must be attributed to the injury inflicted by means of the saw, and the saw alone. It has since been ascertained that he was then employed in sawing fir timber.

Now it has been stated, that on the 2d day after the receipt of this wound, the hand inflamed, and the constitution sympathised with the local injury; that there was head-ache and a hurried circulation; and that he was largely blooded to 34 ounces :---That on the 6th day after the injury, the whole arm was erysipelatous, and that an opening was made into the cellular substance, from which could be pressed a quantity of matter, as from a sponge :---That owing to the necessary openings, made into the parts over the hand and arm, the tension was relieved, and an amendment experienced, which, being aided by the bark and sulphuric acid, given on the 12th day after the accident, (16th of August,) almost uninterruptedly continued until the 1st of September, (for a space of 14 days) when a second train of bad symptoms, similar to those first felt in the arm, with the exception of cutaneous redness, appeared on the opposite or left leg and thigh, which became greatly distended with fluids underneath the skin :---That openings were made

also into this thigh, and large quantities of matter evacuated; that excoriations appeared on the spine, sloughs formed on the sacrum and left thigh, and gangrene on the right heel; and that of these complicated miseries he died on the 67th or 68th day after the laceration of his hand.

Now that this man must have had a good constitution, the recital of his case doubly proves:

1st. By his physical powers in withstanding the violent siege made by disease on his right hand and arm.

2dly. By contending against a renewed and more desperate series of morbid actions on his left thigh and leg for so long a time. Had it not been for this second storm, he might possibly have survived the first.

To what circumstances could this amendment, for the space of a fortnight, be attributed, but to the incisions, &c.? Now had venesection been employed at this period, (the 15th of August) the temporary cessation might have been ascribed to the loss of blood; but we have read, that on the 6th day after the laceration, (10th of August) and four days after phlebotomy, the erysipelas had advanced on the right hand with tumefaction, which was reduced by incision; and that a second opening was made on the arm on

the 15th, from which time an amendment continued until the 1st of September.

The curious part of this case, or rather of the disease, is that of its commencing in the right hand, going up that arm to the shoulder, crossing over the viscera, without attacking them, to the opposite side of the body, running down the left thigh and leg, forming matter in them, and producing also gangrene on the right heel. It may be very properly called a travelling disease, the Erysipelas Phlegmonodes of many authors, Cellular Erysipelas, or the irritative inflammation of Mr. ABERNETHY.

CASE 3.

JOHN BATE, æt. 45, shipwright, working as a labourer, sallow complexion, strumous appearance, residing in Princess-street, Devonport.

On the 16th of August, 1824. Had the point of his left fore finger jammed off by a plank, and immediately amputated at the last joint. Cathartic pills given.

17th. Perfectly easy. Cathartic mixture ordered.

18th and 19th. Doing well.

20th. Complains of pain in the hand, and of head-ache; pulse about 96, and full. Dressings removed, and cataplasms substituted. 24 ounces of blood were taken from his arm.

21st. The stump easy, and looking inactive, pulse 110, weak; tongue white and moist. Calomel and opium given with confection at bed-time, and cathartic mixture in the morning.

22d and 23d. Boluses continued.

24th. Great prostration of strength, anxiety, and nausea. A blister to the epigastrium; cathartic mixture repeated.

5 o'clock, P. M. Symptoms much aggravated; the pulse scarcely perceptible at the wrist; breathing oppressed; abdomen tense and painful to the touch; singultus. Castor oil and tincture of senna given immediately, and repeated after two hours. Fomentations to the abdomen and enemata ordered.

9 o'clock, P. M. Profuse perspiration; breathing excessively oppressed; he is evidently sinking.

25th. Died at 9 o'clock, A. M. rational almost to the last.

DISSECTION.

Body examined nine hours after death. The thorax contained about 16 ounces of serum. The right lobe of the lungs tinged with blood, and bound with strong adhesions to the pleura costalis. The left lobe black, disorganized, easily torn, and apparently gangrenous. The pericardium rather vascular, containing about 2 ounces of fluid; the heart sound.

The intestines were in general excessively distended with gas, particularly the colon and cæcum; no fæces; the whole highly inflamed, particularly the lower portion of the ileum and cæcum, which, in some places, approached to gangrene. On removing the intestines, a tumour was perceived on the right side, which contained nearly a pint of pus, and was found to surround the right kidney, that viscus being apparently healthy; the left kidney also sound. The liver was much enlarged, very soft, turgid, easily lacerated, and with difficulty separated from the side. The gall-bladder distended with bile. The spleen and pancreas healthy. The stomach also healthy, except a red spot, about an inch in diameter, on the posterior or vertebral side, near the pyloric orifice.

REMARKS.

With respect to the case of John Bate, we have to determine, from our knowledge of human pathology, how far the forcible removal of the left fore finger, first, by a log of wood, and secondly, by amputation, could lead to the train of morbid actions which sprang up in this instance on the 4th day, and terminated in death on the 9th day after the accident.

Having the advantage of an examination, *post mortem*, we must also reflect on the

possibility of such an accident leading, in the short space of nine days, to an effusion of fluid, one pint, into the chest, and producing an hepatised or gangrenous appearance of the left lobe of the lungs. Yet the pectoral affection followed so closely the wound of the finger, that we cannot doubt the connection which subsisted between these two organs—the finger and the lungs---in becoming thus diseased.

We have also to consider whether the gaseous distension of the cæcum and colon, with the inflamed and gangrenous appearances on the ileum and cæcum, were the result of this fever, which was produced by the forcible removal of the finger, or of any other pathological condition. We shall hereafter find that these morbid appearances about the colon, and other viscera in the abdomen, were by no means uncommon in the unfortunate victims of this disease.

It is equally remarkable that an abcess, containing one pint of pus, had formed in seven or eight days, over the right kidney, in consequence of an external injury of the left fore finger: and yet we have no evidence to warrant any other conclusion, being assured that BATE was at work previous to the accident, in good health. Matter may form in twenty-four hours after the commencement of irrita-

tion in a part, and therefore nine days were a sufficient time for the production of an internal abcess; but why irritation, commencing in the left fore finger, should select a spot around the right kidney, for a collection of pus, we cannot exactly explain. We have no evidence, although his habit of body was strumous, that BATE had any internal complaint previous to the accident, which complaint could at all account for the existence of serum in the thorax, or of matter in the abdomen; but, on the contrary, these morbid appearances, taken into consideration with the history of the disease, its course, duration, and mode of acting, in other men, must be regarded as the ultimate result of that irritation, which was primarily established in the finger by the injury inflicted. We cannot argue that the wood was poisonous, or that it was not poisonous, for want of sufficient data; but since iron, glass, and other mechanical excitants, produced about this time results nearly similar, we have so far presumptive proof at least, that the wood was chemically innocuous, though mechanically irritative.

It was both desirable and equally important for our enquiry, to ascertain the kind of wood by which the injury was inflicted; but the amputation following so quickly

the bruise, does away with the supposition that any poison, even if the wood had been poisonous, could be either lodged on, or absorbed from, the wound primarily produced. He was blooded on the commencement of the constitutional disturbance, and the blood was buffy; but the quantity lost did not check the malady, for the pulse advanced from 96 to 110 on the day after the bleeding.

Case 4.

William Butters, æt. 40, a joiner, and a very healthy man, possessing an excellent constitution, who has been always most temperate in his living, residing in Chapel-street, Stonehouse, with his wife and six children.

On Tuesday, the 10th of August, 1824, whilst planing a piece of mahogany in the joiners' shop of his Majesty's Dock-yard at Devonport, he tore up the nail of his right ring finger by a splinter of wood. Dr. Bell removed the nail on his application at the Surgery, and ordered poultices, which were continued to the finger for five days, and afterwards light dressings for three days, he, Butters continuing at his work during that time.

This accident happened the more easily in consequence of the infirm state of the nails of the ring and middle fingers of the right hand,

owing to a fracture of the last phalanges, produced by their being jammed between two pieces of timber in February last. He was then confined six weeks by these fractures, but suffered no unusual constitutional irritation.

On Wednesday morning, 18th of August, whilst dressing himself, he felt shivered and unwell, but nevertheless went to the Dock-yard. Whilst there he became so ill with general disorder, rigors, and faintness, that he was obliged soon to quit the yard previous to the usual hour of departure. He applied to Dr. Bell, who remarked that his illness could not depend on the finger, which, on this day, looked healthy and granulating. Poultices were again applied to the finger, and cathartic medicines ordered.

19th. His bowels had been freely opened. He was somewhat easier.

20th. His fever had increased, with severe head-ache. His hand and arm were now much inflamed; the sore felt cold and smarting, rendering the connection, which had been before doubtful, between the local injury and the constitutional disturbance, both manifest and certain. V: S: ad ℥xxxiv.
Medicam: Cathartic: cum Ant: tart: subinde.
Fotus partibus affectis.

21st. The blood, drawn yesterday by Mr. Dryden, buffed; fever not diminished; head-

ache unsubdued. His head was now so disordered, that a sort of redness *(Photopsia)* prevailed before his eyes, and a phantom as though a piece of wood was encircled by fire—signs highly indicative of great cerebral excitement. Hand and arm very painful, much swollen, and erysipelatous. The redness appeared in patches and lines on the inner side of the arm in the course of the absorbent vessels, which were red even to the axilla. Great œdema over the whole arm. Admoveantur Hirudines xvi. temporibus.

Repr: Mistura Cathartica.

Sumat nocte Bol: sequent:

℞: Pulv: Antimon: gr. vi.
Ext: Opii gr. ij. Confect: q: s: m.

22d. The leeches afforded relief to his head. Symptoms as yesterday. Continuerentur Cataplasmata et Fotus.

23d and 24th. No particular alteration.

25th. The whole hand and arm still erysipelatous, and greatly swollen in an increased degree, pitting like dough on pressure, his pulse rapid and weak; strength greatly exhausted; head-ache rather lessened, but still very bad; tongue moist and clean. On the back of his right hand an obscure fluctuation was now perceptible, which Mr.

DRYDEN opened by an incision nearly two inches in length; the cellular tissue was injected with pus.

Habeat Ol: Ricini ℥ i. statim.

26th. The tension of the whole arm was lessened, and the head-ache relieved, after the opening; the redness disappearing.

27th. Improving. Ol: Ricini ℥ i. st:

28th, 29th, and 30th. Better in every respect. Repr: Oleum. Habeat Mistur: Cathartic: pro re natâ.

September 2d. Soft dressings and light bandages were reapplied to the finger and arm, in lieu of the poultices, &c. which had been continued np to this period over the whole limb.

8th. Convalescent. Owing, however, to excessive debility, and stiffness of his right hand and arm, BUTTERS could not return to his duty in the Dock-yard until Monday, the 11th of October.

REMARKS.

EIGHT days nearly elapsed here, between the receipt of the local injury and the commencement of fever. Yet there can be no doubt that the latter was consequent on the former, or, in other words, that the injury was the cause, and the fever the effect.

There can be no doubt also, that this was the same sort of disease which prevailed

amongst the mechanics in the Dock-yard about the same time. Vesications were, however, wanting on the arm to characterize genuine erysipelas; but there was tumefaction, redness (disappearing on pressure), and fever. The disease, called by Mr. PEARSON, *Œdema cum Erythemate*,* resembles this appearance; but the violence of fever constitutes the distinction.

As BUTTERS recovered, I made a point of seeing him at my own house on the 23d of January, 1825. He informed me that a tightness and smarting of these two fingers were still felt when he attempted to grasp any large body, owing, I suppose, to adhesions formed between the extensor tendon and its sheath.

From the present appearances, as well as from the history of his case, I have no doubt that inflammation was continued on from the root of the nail, through the sheath of the extensor tendon to the arm, as well as in the cellular substance over it. Yet, on the first invasion of fever, so little apparent was this connection between the local and constitutional irritation, that DR. BELL doubted the dependance of the latter on the former.

It is remarkable that the fracture of the two

* Principles of Surgery, 1808.—*p.* 322.

last phalanges of these fingers in February 1824—an accident accompanied by the loss of both nails---should not have been followed by any unusual disturbance of the constitution. This accident then confined him *six* weeks from his Dock-yard duties; but he preserved the free use of his fingers afterwards—the nails alone remaining infirm and deformed.

A comparison of these two accidents, viz. the one in February, and the other in August, shews that the constitution will become disturbed at one time by a slight provocation, and that it will remain tranquil at another, under a heavier grievance.

A report having been raised respecting the injurious nature of Teak wood, I asked Butters if he had used any of it, and he replied in the negative, saying, that he had seldom for a long time worked upon it.

On being asked if he could account for the cause of his disorder, he replied that the heat of the weather, which, at the time, was very oppressive, made him feel both restless and feverish at night.

Patients may be allowed to form some opinion of the treatment practised on them. Butters says that he did not find any relief from venesection; that the leeches diminished his head-ache considerably; but that the incision into his hand produced the most de-

cided amendment. To what other circumstances can his recovery be attributed? To the leeches, therefore, as accessary, and to the incision as principal, if to any measures at all, would I ascribe the salvation of his life. But a great deal must be allowed for his most excellent constitution. I mention the fact merely, without questioning the propriety of the venesection employed in any instance, that this is the only man who recovered after bleeding from the arm.

Case 5.

Robert Horne, æt. 32, robust and tall, a sawyer, residing in Marlborough-street, Devonport, married, with one child.

On Monday morning, the 30th of August, 1824, he went into the naval yard in good health, about his usual work of sawing in a pit, and received, towards evening, a severe contusion from a piece of English Oak timber, which fell on his left great toe, and carried away the nail. Cataplasms were applied, and cathartic medicines ordered.

31st. Remained from work, but attended the Surgery.

September 1st. Leg painful; towards evening shivers and slight feverish symptoms appeared.

2d. Reported to have been attacked with fever; he had severe head-ache, and symptoms

of pyrexia. Dr. Bell directed the application of twelve leeches to his temples, a continuance of the cathartic medicines, with the addition of tartarised antimony, and poultices.

3d. Not better. Pain felt in the left thigh. The foot and ancle were both swollen and erysipelatous. There was now some confusion of intellect; his answers were incoherent, and his manner bordered on delirium. Twelve leeches were again applied to his forehead and temples, by Dr. Bell's order. Fomentations to the limb, in addition to other measures.

4th. Fever increased. Pulse 120, and strong. Erysipelas extending over the whole leg, which is painful. Mittatur Sanguis ℥ xx.

℞ : Hydr : Submur : gr. v.
Confect : q : s : f : Bol : st : sumend :
Repetantur Medicamenta purgantia

Eight o'clock, P. M. Bowels not moved. Repr : Bol : et Mistur :

5th, (Sunday.) Fever abated. Cont^r.

6th, (*Nine o'clock, A. M.*) No particular alteration. Cont^r.

Eight o'clock, P. M. Fever again increasing; erysipelas extended even to the knee; the integuments over the tibia looked mottled or variegated, like the colours of a rainbow; red lines and patches were also seen to run

up the limb to the groin. Tension very great. Delirium. Venæsectio ad ℥ xvj.

Ten o'clock, P. M. Not relieved. Head-ache most severe Frequently takes off his night cap; picks the bed-clothes, and endeavours to get out of bed.

Repr. V : S : ad ℥ xxiv

7th. An obscure fluctuation was observed over the left foot, from which was discharged some bloody serum, through an opening made into it. Head-ache and fever lessened; exhaustion very great; pulse 120, and weak; blood buffed.

Repr : Mistur ; Cathartic :

℞ : Ext : Opii gr. ij. ft : Pil : h : s : sumend :

8th. Tension of the foot relieved. A sphacelus is forming below the external malleolus. Habeat Enema commun : cum Ol : Terebinth : ℥ j. statim ; et Sumat post horas duas. Ol : Ricini ℥ j.

℞ : Liquor : Ammon : Acetatis
Mistur : Camphoræ aā ℥ iv.
Sqr : ℥ ij. f : Mist : Capt : Cochl :
Ampla tria omni sextâ quâque horâ.

9th. Stupor appeared; his answers were unsuited to the questions addressed to him;

he appeared rather deaf and dull; pulse 130, and weak. An incision was carefully made into the sphacelated parts, from which oozed a quantity of yellowish transparent serum. The sloughs, according to Mr. DRYDEN, who made the incisions, were like wetted or tanned leather; but were not inaptly compared, by HORNE's widow, to "*rotten apples*" in appearance. Treatment continued.

10th. Stupor alleviated; tension of the whole limb relieved; bowels open; pulse rapid and weak. Wine allowed.

11th. A small sphacelus perceived on the inside of the left calf. A scarification was made also into it, and serum discharged. There was occasional hiccough. Some tincture of bark and cinnamon given in mint-water.

12th, (Sunday.) The tension and inflammation of the whole limb diminished. The original wound on the great toe now nearly sound. Hope was again entertained of his recovery. His prostration of strength was however very great. Singultus sometimes distressing; pulse rapid, weak, and irregular; tongue moist; bowels open. Cont.r

13th. The appearance of the whole limb much improved; his debility is, however, most excessive; pulse scarcely perceptible, and very irregular. He seems to understand

the questions which are put to him, but to have lost the power of answering them.

14th, (Tuesday.) From Sunday he has continued in a comatose state, answering only *no* or *yes* to the questions put to him, until six o'clock on this evening, when death released his sufferings.

DISSECTION.

On the day after his death, several incisions were made into the limb. The cellular substance was everywhere distended with a yellowish or amber-coloured and transparent serum. Pus had formed around the sphacelated spots, which never extended deeper than the fascia. The subjacent muscles appeared to be sound.

REMARKS.

A young and healthy man bruises his toe, fever arises, inflammation runs up his limb, certain spots perish, his sensorium is disturbed, and he dies in sixteen days.

Now what happened in this contusion of the toe? The bone was not broken; but the parts over the bone—the periosteum, the cellular membrane, and the tendon with its sheath, were probably injured, and also the parts which form the nail disorganised.

Paronychia or whitlow, which arises from a springing of the nail, and a consequent irritation of the surrounding parts at its root is sometimes a formidable disease, and not dissimilar to the present. I have known many fingers removed in consequence of a whitlow, badly treated. Death even is mentioned by Sir A. Cooper, in his Lectures, from merely opening a whitlow.

We have evidence then that the skin and cellular substance were sufficiently irritated to set on that morbid action, which marched from the toe up the limb to the trunk of the body, and carried destruction in its route. But, it may be asked, was an injury of the skin and subjacent tissue adequate to the production of such formidable and fatal consequences? I would say, certainly yes. Evidence will be found, on an examination of the other cases,* to shew the probability of this occurrence. Then, it may be asked also, how do other people escape who meet with similar injuries? This question can be very easily answered by medical men, who have seen much of disease, by saying that the human constitution is susceptible at one time of morbid action, by which it will be uninfluenced at another; a fact of which we have a good

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* See case 3.

example in the preceding history of BUTTERS's complaints.

Now a probability exists, and, I know, a suspicion has arisen, that the tendon or its theca must have been also injured by the contusion. Although we have ample evidence, without this additional consideration, to account for the phenomena in HORNE's case; yet I should not be justified, as the commentator on the facts before me, in passing over altogether this seemingly probable event, without adding a word or two on it.

I regret that the theca of the extensor pollicis proprius tendon was not examined, because the injury was received on or about the last joint of the great toe, to which it is inserted; and the inflammation might be supposed to have continued up the foot under the annular ligament, in the course of this muscle, which lays between the tibialis anticus and extensor communis digitorum pedis. But there is evidence to conclude, that the tendon did not participate in this mischief, as the muscles are said to have been healthy in appearance. And besides, if the tendinous parts had been injured, would a superficial incision, made over the foot and ancle bone, have produced a reduction of the tumefied parts? True it may be that these were not examined, with any reference to the supposition

before us. But still it would have been reconcileable to the notions of surgeons, to have ascertained the actual state of the tendinous parts underneath the injury.

I do not know why, exactly, but experience shews the fact, that injuries about the extremities of the toes and fingers are generally painful, troublesome, and occasionally dangerous. Tendinous, ligamentous, and cartilaginous parts, which are naturally endowed with very little sensibility, produce most alarming and horrible consequences when they become inflamed.

Now there is a whitlow of the skin, a whitlow of the cellular substance, a whitlow of the tendon or its sheath, and a whitlow of the periosteum: of these the third is the most dreadful, but I believe that all four may exist in a distinct or combined form.

The swelling of the parts is disproportionate to the excruciating pain of these various affections. The hand, wrist, fore arm, and shoulder become much swollen and intensely painful, accompanied with fever, in some cases of whitlow. So far for a similarity of this disease, and of that which occurred in HORNE.

The contusion of the toe was not so violent even as to produce sloughing—for the wound had nearly healed whilst the erysipelas and sympathetic irritation advanced up his limb.

It is impossible now to say what might have been the effect of a free incision into the toe, or of amputation---for sound Surgery admits no principle on hypothesis, no axiom which is not verified by the test of experience; but it is the opinion of Mr. DRYDEN, that incisions were not made sufficiently early into the sphacelated parts. The admission of this circumstance is a proof of the candour and desire for improvement, which this gentleman has so laudably evinced in furnishing the detail of the cases.

The Dissection shewed a very common result with respect to the fluids, effused in gangrenous erysipelas.

On a cross-examination, Mrs. HORNE assured Mr. DRYDEN and myself, when we called upon her on the 24th of January, that his head seemed to be most confused and disordered at the commencement of the fever—for they had then some difficulty in confining him in bed during this state.

In answer to a question respecting the weather, she said, that the room became so insufferably hot during his illness, that they were obliged to let out the fire, and to keep the windows, as well as the doors, open by night and day.

It appears that fever declared itself on the 4th day after the accident, and that the

sensorium was disturbed on the 5th; that the increase of disease on the 6th called for some active measures to arrest its advancement, and that therefore the loss of 20 ounces of blood from the arm was tried; that on the 7th there was a slight abatement, which required no counteracting measures; that on the 8th the disease had arrayed itself in such a terrific form, as to call for two additional blood-lettings, which made a total loss of 60 ounces of blood, drawn on the 6th and 8th days after the accident; yet the disease went on, and exhaustion followed.

On the 9th day, (7th of September,) we find that a collection of fluids had formed, which being evacuated, the tension subsided. But on the 10th the first index of approaching dissolution appeared in a dead patch *(sphacelus)* over the outer ancle; and on the 11th the sensorium was oppressed with stupor, which the removal of tension by incision seemed to alleviate; but on the 13th day after the disease, another spot perished on the calf, shewing that dissolution was still marching from the extremity of the body towards its centre, although no continuous connection was visible between the dead patch on the ancle and that on the calf.

No other patches were afterwards observed, but the usual concomitants of this state of

constitution, viz. excessive debility, exhaustion, hiccough, and a sinking of the powers of life, developed themselves more and more fully until the evening of the 16th day, when universal death of the body occurred.

Whenever certain parts of a limb perish in the manner herein exemplified, we may be convinced that a state of the body exists, howsoever induced, which, if it cannot be altered, generally extinguishes the vital powers altogether. These patches are then to be regarded as omens of danger, and the harbingers of that animal decomposition, which commences in partial, and terminates in universal death.

Case 6.

Gregory Nichols, æt. 45, shipwright, a very tall, stout, and athletic man, generally healthy, excepting some nephritic ailments, and a pain in his right side, the result of a blow received from a fall several years ago, of which he occasionally complained. Residence---Pembroke-street, Devonport.

On the 7th, 8th, and 9th of September, 1824, he received sundry and slight abrasions over his left shin bone whilst employed as a labourer stowing timber near the Mast and Boat Ponds in his Majesty's naval yard, at Devonport. The weather was very hot and sultry at this time.

On Saturday, the 11th, he did not work, but went to the Dock-yard to have his leg dressed, and was ordered a cold lotion. He confined himself to his house during the latter part of Saturday and the whole of Sunday.

On Monday, the 13th, he performed his usual work in the Dock-yard throughout the day, although his leg had become very painful. Whilst at work he was often shivered, a feeling attributed to the cold lotion he had used. At night a pain ensued, and red lines appeared in the thigh, with tenderness in the inguinal glands; he was flushed and feverish, and had pain also in the Occiput.

14th September, (Tuesday.) Was reported sick, and visited by Dr. Bell, who immediately pronounced on the character of the disease, and ordered cataplasms and fomentations to the leg. Mr. Dryden, who saw Nichols afterwards, directed an emetic, and, after its operation, some cathartic pills and mixture, which also produced the desired effect before morning.

15th. The pain had extended itself from the leg to the groin, hip, and back; the absorbents in their course exhibited a streaky or erythematous redness, which, in the language of the widow, would "*come and go*," viz. the redness was erratic. There was

a particular patch of it in the groin; and there was also considerable Œdema of the whole limb. His fever had increased. Pulse 110, and full. Venæsectio ad ℥ xxxiv.

℞: Hydr: Submur: gr. viij.
Pulv. Antimon: gr. vj.
Confect: q: s: m: f: Bol: No. ij.
Capt: unum hâc nocte et alterum mane.

16th. Fever lessened; the redness of the limb scarcely apparent; the tenderness in the groin nearly gone.

Sumat Ol: Ricini ℥ j. statim.

Six o'clock, P. M. Bowels relieved.---

Rept^r Bol: anteâ prescript:

Omni sextâ quâque horâ.

17th. Not worse; bowels open; he was totally incapable of moving the limb, which was raised for him. Cathartic mixture ordered, with tartarised antimony, every fourth hour.

18th, (Saturday.) Passed a restless and a dreadful night; complains of an increased pain in the right hypochondrium: pulse 110, and small. His spirits have never flagged: he is even now confident of his recovery, although his danger is apparent.

Admoveantur Hirudines 12 lateri dolenti.

Rep^r Medicam: purgantia.

Five o'clock, P. M. Symptoms increased; there had come on pain and tenderness all over the abdomen with nausea. Venæsectio ad ℥xx. Syncope was produced by the bleeding, and hiccough followed, with occasional fainting. Took castor oil, and had frequent injections during the night. Twenty-four leeches were directed to the abdomen, and an anodyne draught ordered.

19th, (Sunday,) *Seven o'clock, A. M.* Much worse. Leeches could not be applied on account of his restlessness. He had tumbled from one side of the bed to the other, without resting; yet he was rational. Pulse now scarcely perceptible; cold and clammy perspirations had appeared, with nausea, and increased hiccough. The warm bath, and effervescent draughts were ordered, but not used. He died rather before *ten o'clock*, on this morning.

SECTIO CADAVERIS.

The body was examined eight hours after death. Emaciation trifling. Parietes covered with fat. Intestines generally inflamed, particularly about the termination of the ileum and the commencement of the cæcum, which were dark in colour. The mesentery and meso-colon were vascular with red patches, the whole being amassed in sero-purulent

fluid. The right kidney was completely disorganized, and changed into a mass, like thick cream in colour and consistence. The left kidney sound. The urinary bladder adhered very firmly to the surrounding parts, and contained about six ounces of healthy urine. The other viscera, particularly the liver, were healthy in appearance.

REMARKS.

We see here what a sneaking and insidious disease killed this fine and athletic fellow, proving that "the battle is not to the strong."

The series of changes, from health to disease, were so connected and evident in this case, that a doubt cannot exist that the contusions and abrasions received over the shin bone, slight as they were, provoked the absorbent vessels into a state of inflammation; or, in other words, that there would have been no inflammation, if there had uot been previous local injury; *ergo*, that the abrasions were the antecedent causes to the constitutional changes, which followed as effects, and manifested themselves by redness and pain of the absorbent vessels and glands, by Erythema or Erysipelas, (whatsoever it be nosologically called,) and by fever.

Now in Devonshire especially, a habit pre-

vails of kicking shins in wrestling. In this gymnastic exercise, two men collar each other, and kick each other's legs; whosoever throws his opponent first on his back, gains the trial of strength. Now sometimes a man's shins may be kicked all over, and yet no bad consequences, so far as I am informed, have ever ensued from this sport.

The contusions thus inflicted must certainly be more severe in degree than the same sort of injuries produced on the leg of GREGORY NICHOLS; and yet the latter created greater mischief than the former. So far would an idea be fostered, that the wood was poisonous; but how was such a poison to have been applied to the leg through a thick trowser and stocking? It is much more probable to suppose, that his constitution might have been particularly susceptible of irritation at the time. However the short period of five days, during which NICHOLS was laid up from his duty, proves the rapid and determined character of the disease, and the abortive effects of that assistance which was so promptly rendered to him by his medical advisers.

The examination of his body, too, shewed a result which had been common in the foregoing examples, viz. an inflammation of certain parts of the ileum and cæcum, bordering on the darkness of mortification, with red patches

on the mesentery &c., and a quantity of sero-purulent fluid (probably also coagulable lymph) in the abdomen. Whether the disease of the right kidney was antecedent to, or contingent on, this attack of disease, may be a matter of question. Certain it is, however, that the appearances in the bowels were the result of the disease, for it was distinctly traced to them, and the morbid effects were compatible with the pathological notions, entertained by medical men; but we are not equally clear about the disorganisation of the kidney. This affection may explain, in my opinion, the nature of the former injury on the side, and may also account for the nephritic complaints, proving the great value which we ought always to attach to the examinations of disease after death.

Mrs. Nichols, at a visit paid to her by Mr. Dryden and myself on the 26th of January, for the purpose of ascertaining if we had omitted any essential point in her husband's complaints, said that he had occasionally suffered from a painful micturition, a complaint ascribed to an enlargement of the prostate gland, for which a catheter had been introduced; but it should seem to be more probable that the vesical irritation sprang from this long-standing disease of the right kidney, as no enlargement of the prostate was discovered. The bladder

was bound to the surrounding parts so strongly as not to admit of distension, beyond a limited capacity, nor of containing above twelve ounces of water. This contracted state might be fairly referred to some previous excitation, derived probably of the kidney.

The bladder is very liable to become irritable owing to a disease of the kidney. Whether this be from continuous sympathy, as Mr. HUNTER called it, along the ureter, I shall not determine; yet I will relate one instance of the sort, pre-supposing it be not disputed that the disorganisation of NICHOLS's kidney must be referable to a chronic or long-standing, and not to the acute, disease, of which he died.*

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* During the summer of 1818, when I practised surgery in this town, JOHN WILLIAMS, æt. 16, a delicate boy, was brought to me by his mother, labouring under symptoms of stone in the bladder, as she supposed. The mother was very anxious for me to take charge of her son, as she had heard of two patients on whom I had successfully operated for stone.

The boy had frequent and urgent calls to void his urine, which deposited, on cooling, a whitish, ropy, and mucaginous matter, like gruel in consistence, of greater specific gravity than urine, which matter could be easily suspended over a stick. His water would sometimes stop suddenly whilst flowing freely, and occasion great suffering and dread. He had itching at the glans penis, a pain in the loins and hypogastrium, and occasional rigors. In short he had all the leading symptoms of stone in the bladder.

Sometimes we suppose that the mind has a great deal to do with a patient's recovery. In my opinion very loose and vague notions are often attached to mental influence.

Now the firm and confident mind of NICHOLS —the "*mens solida*" of HORACE—was all in his favour, for his hope of weathering the storm (as he called it) never forsook him to

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I sounded the boy several times and detected no stone; Mr. C. TRIPE also sounded him with me and discovered none. The boy was afterwards sent to the Plymouth workhouse, and died on the 7th May, 1819, under the care of my friend, Mr. JOHN FUGE, Surgeon, in this town, who kindly invited me at the examination of the body, and presented me with one of the kidneys, which I still have in my Museum.

The urethra was pervious, and the bladder sound—prostate healthy. There was no calculus—the disease was entirely confined to the ureters and kidneys. The mucous coat of the ureters was ulcerated and thickened. There was an enlargement of both kidneys, which were disorganized by scrophulous tubercles, pulpy, ovate, and circumscribed in appearance, occupying the places of the papillæ and infundibula renis. Of these tubercles there are four in the kidney in my possession, the cortical or secerning part remaining generally sound at its upper part.

I mention this case in order to shew the sympathy existing between the kidneys and bladder, and to impress the importance of examining bodies after death, whenever an opportunity occurs, for the good of the living.

This boy's complaints had existed above five years, and arisen from the kick of a horse in his loins, as it was supposed, when he was recovering from the small pox.

the last. The corporeal malady alone, therefore, destroyed his life, unaided by either fears, qualms, depression, anxiety, or any other mental co-operation. His faith, too, was great in his medical attendants.

It was at the examination of Nichols's body that the late Dr. Bell supposed he had laid the foundation of his death, The Doctor, in the act of directing an Assistant how to sew up the body after inspection, scratched the back of his right fore finger, with a Surgeon's needle which had been used by Mr. Dryden, in opening the body.

Case 7.

William Lobb, ætat 39, shipwright, a healthy, temperate, sober, and industrious man, married, with four children, residing at Torpoint :—

On Monday, the 13th of September, 1824, was breaking up a piece of Oak timber, in which was a large spike nail, the head of which he struck off, and it rebounded against the left side of his chin, leaving there a small contused wound, less than the nail of his little finger, to which wound some of the sticking-plaister in the Dock-yard was applied.

He pursued his work daily until Friday, the 17th, when a swelling first became perceptible in the chin. On that night he retired

to bed, feeling unwell and rather shivered, and became, before morning, most highly delirious, with a hot and burning skin. He suffered very acute pain in his head, particularly at one place over the os frontis.

On Saturday, the 18th of September, his neck was swollen almost parallel with his chin. He had confusion of thought, and severe pain in his head, unlike to common Cephalgia—for the pain would return in fits and paroxysms to a degree so sudden and intense, as to make him leap up with agony, and almost to deprive him momentarily of his senses. Notwithstanding these ailments, however improbable it may seem, he went to the Dock-yard again on this Saturday, and continued to work; but applied at the Surgery, where Dr. Bell ordered him to poultice the chin, and to take opening medicines, which were supplied therefrom.

19th, (Sunday.) Visited by Dr. Bell, who probed the original wonnd, and let out a little blood. Twelve leeches, by his direction, were applied to the chin; the poultices continued, and purging medicines repeated, as his bowels had not been moved.

20th, (Monday.) Mr. Dryden visited Lobb, opened the original wound for the space of an inch, let out some matter, inserted a piece of lint, and directed a continuance of the topical

and general treatment. On this day there existed more continued and steady head-ache, and less of those transitory or electric flashes, which he experienced on Friday night. His wife, when applying another poultice in the evening, observed that some more matter was again discharged from the dilated wound.

21st. Mr. Price, Surgeon to the Ordinary, visited Lobb, and directed a continuance of the cathartic mixture, poultices, &c.

22d. The erysipelas was still advancing over his face and head. Mr. Price directed the application of twelve leeches to the face, and a continuance of the cataplasms and medicines.

23d and 24th. Still visited by Mr. Price, in consequence of Dr. Bell's illness and death. The erysipelas had extended itself also over the head, and had become less vivid in some parts. Vesicles of different sizes had formed, some were as large as half-a-crown, over the face, and others small. An immense Bulla formed over the left ear. Some antimonial powder with opium was ordered.

25th, (Saturday.) Mr. Price and Mr. Dryden visited Lobb together. His eyes were then swollen blind; a deafness and a blunted perception also existed—he could not be made easily to understand the remarks which were addressed to him. His bowels had been freely

opened by the medicines, but his tongue was dry. Twelve leeches were again applied to his face. In the course of this night, his skin was first observed to have become moist, probably in consequence of the antimonial medicines which he had taken. Vinegar and water applied to the face.

26th to 30th. Mr. PRICE continued to visit him. The erysipelas declined in its usual course by desquamation, and the fever subsided. He was ordered wine, soup, and bark, which, it seems, he did not take.

October 2d to 5th. LOBB became decidedly better; his exhaustion was, however, very great.

On the 8th, he was said to be amendiag; and on the 13th to have lost all his complaints, except the great debility under which he laboured.

LOBB remained on the sick-list of the Dock-yard until Monday the 29th of November, when he returned to his usual employment, after a lapse of *ten* weeks confinement by illness, and of *eleven* from the receipt of his injury.

REMARKS.

LOBB's was a case of real and genuine Erysipelas Œdematodes,* with a traumatic origin.

* See Willan on Cutaneous Diseases, 4to., 1808.—pp: 495—6.

Whether or not his occupation of crossing the Tamar river, on mornings and evenings, to and from his work, might have contributed to the production of the erysipelas, is a matter of question. Certain it is, however, that the wound of the nail laid the sources of irritation and disease in the cellular tissue over the chin. One question may arise—if any portion of this tissue was killed? In that case we could understand how and why the living parts set up an aversion to the dead, in order to expel them. But no decided mention is made of this circumstance, and therefore the supposition rests on probability.

Another consideration for medical men is, which of the three systems took the lead in this general disturbance? When a part is so injured, the absorbent system does not commence, for there is little or nothing to be absorbed. The vascular system, it is true, becomes more active in the part; the minute arteries convey red blood, and render the skin, which is naturally pale, both florid and hot. But does the process of disease commence with this increased excitement of the vascular system? I would say, no. The nerves are the instruments of feeling, and of pain, which is but a modification of feeling. If a part be injured or disturbed in its functions, the nerves forewarn the patient of the

mischief, by converting natural feeling into pain; and, therefore, this nervous action is antecedent to the sanguiferous changes, which ultimately constitute organic disease.

These three systems so harmonise in a healthy part, that no one is discordant with another. The blood circulates in our vessels without our consciousness of its motion, and the absorbents preserve such a just equilibrium in the circulation, that there is neither waste nor increase, neither deposition nor removal; but each part preserves its natural form and texture consistent with health. In disease the sanguiferous system becomes too active for the absorbent, and swelling ensues, which is always the product either of deficient absorption, or increased deposition from the arteries.

But why the nervous system should not immediately on the receipt of the local injury create a disturbance in the other systems, but rather wait for four or five days, we cannot explain. The course of the phenomena is obvious, but the time incalculable.

To what circumstances, it may be asked, can we attribute his recovery? This is a very practical and important point for consideration. The disease had certainly reached its acme on the 25th September, having then spread over the face and head, with vesications, and began to diminish from that pe-

riod. But it does not appear from the above history, that the amendment from that time, and the subsequent recovery, could be ascribed to any particular regimen, or plan of treatment. There was very little apparently done. An incision, it is true, was previously made, which might have produced some good.

Lobb was not blooded during any part of his illness, excepting the loss of blood from 36 leeches; therefore bleeding could not have saved his life. The circumstance of moisture appearing on his skin was very favourable, however induced; but this circumstance, unaided by more probable and fortuitous auxiliaries, does not fully account for his recovery.

Such was the waste of strength observed in Lobb, I ought to remark, that he scarcely crippled (if I may use the expression) out of the disease. Now had he been blooded, I trust I need not infer that the little strength, spared him at the last, would have been totally extinguished. I must say, that I think this conclusion arises out of the history of his case; and that this fact proves the debilitating or asthenic nature of the disease—a fact admitted by most nosological writers* on this subject.

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* Willan on Cutaneous Diseases; Bateman's Synopsis; Hoffman de Febre Erysipelatosà fol. IV—obs. I; Alibert sur les Maladies de la Peau; Cullen's First Lines, vol. II; Hunter on the Blood; Brown's Elements of Medicine.

Case 8.

John Rawling, æt. 40, shipwright, living in William-street, Morice-Town, with his wife and three children.

Rawling had not been a very healthy man; his complexion was sallow, and his countenance meager; he had occasionally spit blood; but for some time, prior to the following accident, had made no complaint.

1824. September 17th, (Friday.) He was employed as a labourer, with others, in the naval yard, hoisting and stowing timber with a crane, which jammed three fingers of his right hand, and more particularly the middle finger.

On Saturday, the 18th, (not a day of work) he applied at the Surgery, and received orders to poultice the fingers. Pulv: Jalapæ Comp: *(Ph: Ed:)* ℈ ij. mane.

19th. Easy in the morning, but towards evening shivers appeared and continued on him for some hours. Bowels open.

20th, (Monday.) Went again to the Dock-yard office, but returned, from feeling both shivered and flushed. His hand was now very much swollen, inflamed, and painful, particularly at its back part. The irritation seemed to arise principally from the middle finger. Mr. Dryden was prevented, by una-

voidable circumstances, from seeing him until the evening of this day, when considerable fever was present. Pulse about 100, and full. A red patch was now noticed, half way up the internal and fore part of the humerus, like a blush in a person's cheek. There was no visible trace of any inflammation in the absorbent vessels, nor of any connection between the inflamed hand and this patch over the biceps muscle. Mittatur Sanguis ad ℥ xl.

℞ : Hydr : Submr : gr. iv.
Pulv : Antimon : gr. iij. Confect : q : s :
ft : Bolus nocte sumend :
Sumat cras mane Mistur : Cathartic : ℥ ij.
cum Ant : Tart : gr. ¼.

21st. Felt easier. Pulse about 90, and soft. The erysipelatous patch on the arm nearly gone. Cont^{r} Mist :

24th, P. M. Mr. Dryden was not able to see Rawling since the last report, until this evening, when his attendance on the late Dr. Bell was released; but Mr. Price, Surgeon of the Ordinary, and Mr. Barnes, a respectable practitioner, at Morice-Town, kindly lent their assistance, and did every thing which skill and humanity could suggest. At this time the patient's strength was very much exhausted; the whole arm enormously

swollen and reddened; but no vesications were visible. All hope was now lost—pulse rapid (hurried) and feeble; tongue moist; bowels confined. Mr. LOWER, an experienced Surgeon, at Devonport, accidentally passing at the time, gave his opinion on this case.

℞: Hydr: Submur: gr. x,
Pulv: Antimon: gr. iij. Confect: q: s.
ft: Bolus statim sumend:
Sumat post horas duas Ol: Ricini ℥j.

Eight o'clock, P. M. Bowels opened; pain, swelling, and redness of the whole arm, particularly the humerus, very great. Admov: Hirudines xxiv. partibus dolentibus.

℞: Mist: Camphor: ℥viij.
Tinct: Lavand: Comp: ℥ij.
M: Capt: Cochl: ampla duo pro re natâ.
Vinum ad libitum.

25th. The tension and inflammation of the whole arm reduced; but his strength is fast wasting, and his powers of life sinking. Extremities now cold; pulse scarcely perceptible; singultus; his mind has been very seldom disturbed, an occasional and slight incoherency noticed; he was rational up to the last hour of his death, which took place

between *nine and ten o'clock* on this morning, Saturday. Body not examined.

REMARKS.

A space of eight days and some hours elapsed between the two conditions of working health and death, and five days from the invasion of fever, in the instance of RAWLING. The patch on the humerus was exceedingly characteristic of that peculiar inflammation called "*irritative*" by Mr. ABERNETHY in his Lectures. It seemed to have no obvious connection with the injury on the hand, and yet there was its source. The absorbent vessels were not inflamed apparently, or, at all events, were not seen running in stripes towards the axillary glands, in the manner before detailed. But the hand and arm enlarged generally to an extent, which denoted a considerable deposition of fluids into the cellular substance, from which the absorbents did not remove them.

The swelling of the hand, arm, and shoulder, was ushered in by rigors, and the other insignia of fever, which was of the same type as that observed in the other men; but the local appearances differed. Vesications, which constitute one of the characteristic distinctions of erysipelas, were wanting. There was too much fever to call the

redness Erythema, in the practical acceptation of that disease, although its etymological signification implies mere redness.

It is difficult to account for the local and constitutional disturbance in producing death. We would imagine, *à priori*, that a patient might have sustained a much heavier disease without losing his life; but "*experientia docet.*" His mind continued tranquil almost to the hour of his decease, having been very little disturbed during any period of the progress of his disease. Yet the mind also surrendered with the body to the invasion of disease.

We regret that after the labours of HUNTER*, of CUVIER†, of BICHAT‡, of ABERNETHY§, and others‖, we are still unable to explain philosophically this cessation of the vital and animal functions. There are no means of measuring the extent or force of disease, which will destroy life. Some people die, and we know not why or wherefore, no dis-

* On the Blood, 4to. 1794.

† Lecons d'Anatomie Comparée, tom. I—pp. 1 to 14.

‡ Sur la Vie et la Mort, 2d ed. 8vo. 1802.
Anatomie generale, tom. I.

§ An Enquiry into the Probability and Rationality of Mr. HUNTER's Theory of Life, 1814.
Physiological Lectures, delivered before the Royal College of Surgeons, in London, 1817.

‖ Lawrence's Lectures on Life, &c. 1816 & 1819, 8vo.

ease being found, or, at all events, not sufficient disease, according to the comparisons we draw from an aggregate number of parallel examples, to account for the cessation of life*.

In the instance of RAWLING there was considerable disease on his arm, and many Surgeons might have have hoped to cure that disease; but Mr. DRYDEN was so well acquainted with its character, that the moment he recognised the patch over the biceps muscle, on the first invasion of fever, five days

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* Examinons, par exemple, le corps d'une femme dans l'état de jeunesse et de santé: ces formes arrondies et voluptueuses, cette souplesse gracieuse de mouvemens, cette douce chaleur, ces joues teintes des roses de la volupté, ces yeux brillans de l'étincelle de l'amour ou du feu du génie; cette physionomie égayée par les saillies de l'esprit, ou animée par le feu des passions; tout semble se réunir pour en faire un être enchanteur. Un instant suffit pour détruire ce prestige: souvent sans aucune cause apparente le mouvement et le sentiment viennent à cesser; le corps perd sa chaleur; les muscles s'affaissent et laissent paroître les saillies anguleuses des os; les yeux deveinnent ternes, les joues et les lèvres livides. Ce ne sont là que les préludes de changemens plus horribles; les chairs passent au bleu, au verd, au noir; elles attirent l'humidité; et pendant qu'une portion s'évapore en émanations infectes, une autre s'écoule en une sanie putride, qui ne tarde pas à se dissiper aussi: en un mot, au bout d'un petit nombre de jours, il ne reste plus que quelques principes terreux ou salins; les autres élémens se sont dispersés dans les airs et dans les eaux pour entrer dans de nouvelles combinaisons.—*Cuvier, Art.* I. *pp.* 2, 3.

before its termination, he prognosticated to Mr. PRICE a fatal result. But, until we know more of the vital energies, we cannot explain how HENWOOD could have withstood the disease for sixty-seven days, and RAWLING only five or six days. It is difficult to imagine which of the several vital organs first surrendered, or in what manner they conjointly acquiesced to part with their living principle. We must suppose that the accumulation of disease on the arm operated in some manner on the vital organs, so as to confirm a cessation of their motion; but how this result was effected, or which organ took the lead in parting with its life, we know not.

The heart and arteries ceased their action, and the blood became stagnant; the lungs no longer took in air; the brain and nervous system became insensible to external impressions; the extremities cooled down to the surrounding temperature; and stillness superseded motion. How were these changes effected from the common accident of a blow on the fingers? The vulgar would be satisfied if we said that mortification had struck to the limb. But why should the death of a part destroy the whole of a person's life? We know that this is not the fact. There was no mortification apparent on RAWLING; and, besides, if there had been, we know that limbs

may mortify to a great extent, and the life of the individual be still preserved. The quarter part of a man's body may be cut off, and the patient survive; therefore it is not the death or the loss of a part, even if that had been the case here, which would at all explain the fact of death.

Some other circumstances, then, must elucidate this event; but what these are we cannot describe. So much we understand, that a provocation is given to a part, no matter how, whether by iron, wood, stone, or glass; that part inflames, and the surrounding textures participate; redness, heat, swelling, and pain, are the characteristic signs; vicissitudes of feeling from heat to cold, and *vice versâ*, are experienced, denominated fever; all this goes on for five or six days, and death ensues.

We witness the gradation of changes and the result; but we are not a jot the wiser for our contemplation of the phenomena*. Life is but an assemblage of functions, and death the cessation of them. These two conditions appear daily before our eyes, and leave us in entire ignorance of the intermediate changes.

Diseases, which are the harbingers of the

* On this subject the reader may consult, with much advantage, the elaborate and very valuable work of Dr. Barclay, of Edinburgh, on Life and Organization, 8vo. 1822.

one state, claim our especial attention; but we must be satisfied in medical practice with facts, and contented with our observations of them, trusting never to hypothesis, but as the explication of the evidence presented to our view.

Case 9.

Dr. James Bell, æt. 58, late Surgeon of his Majesty's Dock-yard at Devonport, rather stout, sometimes dyspeptic, but generally healthy:

On the afternoon of Sunday, the 19th of September, 1824, attended the examination of Gregory Nichols's body*, and scratched his right fore finger, over the extensor tendon on the last phalanx, when he was directing a pupil how to sew up the body, with a surgeon's needle, which had been previously used for that purpose. At this time the Doctor appeared in his usual state of health, and took no particular notice of the puncture or scratch so inflicted on his finger†.

On the following morning, September 20th,

* See Case 6.

† It may be here remarked that, in consequence of the unprecedented fatality which had lately occurred, and the untoward character which the wounds generally assumed at this time, he underwent much bodily fatigue, as well as anxiety of mind; and that in crossing the water in a boat on Saturday, to visit a patient at Torpoint, he got thoroughly wetted with rain.

Dr. Bell attended the Surgery at the accustomed hour of nine o'clock, and complained of feeling unwell. When washing his hands he first felt a smarting in the scratch over his right fore finger; whereupon he became shivered, and impressed with an idea that he had caught the disease, then prevailing among the Mechanics of the Dock-yard, which disease had previously agitated his mind, and now made him very apprehensive for his safety. He remained, however, at the office about an hour and a half, and by that time the rigors and general indisposition had increased in such a degree as to produce considerable alarm. Pulse 96, and full. Bowels opened by an aperient, taken on the preceding evening*. The wound on the finger was not inflamed. He was recommended to lose blood from the arm, and to take an emetic, to both of which propositions he had a great aversion, and made insuperable objections. He went to bed, however, before twelve o'clock at noon, and endeavoured to make himself sick by irritating the fauces with his fingers, and by drinking warm water. In the course of the

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* The Doctor frequently took Pil: Hydr: and Ext: Colocynth: or small doses of Magnes: Sulph: to relieve his dyspeptic complaints.

day, his fever had increased, and a reaction or flushing followed the rigors. Dr. Dickson, Physician to the Royal Naval Hospital, at Stonehouse, and Dr. Yonge, of Plymouth, were consulted. He now consented to lose about sixteen ounces of blood from the left arm, by a small orifice, and to take the subjoined Bolus :—

℞ : Hydr : Submur : gr. v.
Pulv : Ant : gr. iv.
Confect : q : s : M :

which was to be followed by some of the Cathartic mixture in the morning*.

21st. Passed a restless night, with an increase of fever. Pulse 130, and full; stomach very irritable; nausea great; tongue coated; bowels open; complains of pain and tenderness over his right pectoral muscle and shoulder, on which he cannot bear the least pressure; but the wound on the right fore finger is not at all inflamed.

Rep^{r} V : S : ad ℥ xxx.

Ordered effervescing draughts, with saline medicines, every second hour.

Eight o'clock, P. M. No relief from the

*As the medicines given to Dr. Bell, though judiciously directed, made no effectual check to the march of his disease, it is thought necessary to give a particular account, only so far as seems to be important in detail.

second bleeding. The blood was neither buffed nor cupped, the coagulum was rather firm. Speaks of a distressing pain about his sacrum and loins, with general lassitude and great weight, and evinces considerable anxiety. There still exists much soreness over the right pectoral muscle, and there is a great prostration of his muscular energies; but withal there is no head-ache. Pulse 130, and small.

Rept.r Bolus, et Contr.r Haust: effervesc: cum Potassæ Nitratis gr. v. 3tiis horis.
Illinatur Linimt: Saponis in partes affectas.

22d. Symptoms all aggravated. Passed a sleepless and distressing night, owing to the excruciating pain in his back, but felt relief towards morning, from profuse perspirations. Still feels pain in his right shoulder, with inability to move the arm; complains of indistinct vision, and mistakes the distance when he attempts to take any thing. Nausea continues; pulse 130, and irregular.

Appr: Empl: Lyttæ Epigastrio
Medicament: Contr.

23d. Slept a little during the night; nausea alleviated, but not gone; back-ache mitigated; pulse very irregular, and frequent;

articulation difficult; thoughts confused; no pain in any part but the pectoral muscle, when pressed upon; there is no redness nor visible sign of inflammation on the skin; the scratched part of the finger is neither inflamed nor swollen. He took Camphorated Mixture, with the Nitrous Spirit of Æther, every two hours, and Wine frequently.

Towards evening his breathing became laborious, and delirium appeared.

Appr: Empl: Lyttæ suris et imo Colli.

24th. Became perfectly insensible during the night; pulse wavering, occasionally indistinct, and imperceptible; breathing laborious; stupor and coma present; the sphincters relaxed, and the discharges passed involuntarily; profuse perspiration towards morning, when the breathing improved. Took four doses of the Sulphate of Quinine (ʒ i.) without benefit. His deglutition was at last impeded, and a vacant stare occupied his countenance until *seven o'clock on this evening*, when he sunk without a struggle. Body not examined.

P. S. The Sulphate of Quinine has since been ascertained by Dr. Dickson not to have been genuine.

REMARKS.

I do conceive that many important deductions may be drawn from a simple but faithful detail of the complaints which terminated the life of this valuable Physician and Surgeon. We are embarked on a voyage for the discovery of truth: our objects are directed towards the alleviation of human misery, and the more successful treatment of an alarming and fatal disease. The good of mankind, the advancement of science, and the improvement of our profession, equally sanction our efforts to attain the truth, and stimulate our circumspection to see that we are not ourselves deceived, lest we also deceive others.

Should any essential circumstance have been omitted in the preceding history—and I have no reason to believe that any important fact has been suppressed, which could render the case more perfect, I would still think, with every regard to perspicuity and deference to private feeling, that enough is herein elicited to enable the Medical Practitioner to form that clear and distinct opinion, which is necessary to guard his prognostic, and to plan his treatment.

The case resolves itself into two primary considerations :—

1st. What influence are we to ascribe to mental anxiety?

2d. What importance to attach to the local injury?

We will discuss these two considerations separately and conjunctively. No person, who saw Dr. Bell in September last, can deny that he had suffered great mental uneasiness, in consequence of the deaths of many men, owing to circumstances which he had never before known to produce these re-results. As the Surgeon of the Dock-yard, zealous in the performance of his duties, he had been much harassed by the unfortunate, unexpected, and unaccountable deaths of many men from accidents, which, in themselves, appeared to be trifling and insignificant. He feared, perhaps, that his reputation was at stake, though his merits were unassailable. He was annoyed that he could not explain the facts, and vexed at the want of success which accompanied his treatment.

It must be admitted, on indisputable evidence, and it is sufficient for our purpose to allow, that Dr. Bell's mind had been much perplexed by the unprecedented loss of the men, who died under his care. His anxiety was apparent to his friends and associates. Every allowance must be made for his solicitude—and it is not for me to determine whether or

not such a disturbed state of mind, unaided by other morbific agents, could of itself have caused his death, as I was not consulted about him.

I have never known an instance, however, where death has followed terror or vexation, and presented a corresponding series of symptoms. Soldiers going into battle; culprits ascending the gallows; mariners shipwrecked, viewing their watery grave, do not perish from apprehension---a situation fraught on every side with peril and disappointment, may operate dreadfully on the human mind, and yet not deprive the aggrieved of existence.

We cannot therefore suppose, at least I do not believe, that the state of Dr. Bell's mind, however it might have been distressed by the loss of eight or ten men in an unexpected manner, at all accounts for the pain in his shoulder and back, or for the rigors and smarting in his finger, or for the other symptoms, which were kindred to those seen in the other patients, and the precursors of his death. His mind was not worked off its hinges, nor did he appear to be incapable of conducting his own affairs---for his mental energies were fully equal to the performance of his professional duties on the day of his attack, only five days before his death. And,

besides, the termination of his life by fever—the anomaly of his symptoms—the period and manner of his attack—teach us to look for some agencies, independent of his mind, in accounting for the phenomena of his disorder; and when we consider the unalterable impression on the Doctor's mind, that the scratch on his finger had some relation to, or concern in, the origin of his malady, we are bound in commenting on his case, equally by the evidence, and by our respect for the opinion of the deceased, not altogether to pass over this circumstance unnoticed. He surely must have been a judge of his own feelings. He might have been vexed, but there was nothing for him to dread—Dr. Bell had done his duty towards the sick, and tried every measure, with a view of preserving their lives.

We must, then, allow something for the scratch on the finger, or we must allow nothing. If it really had no concern with his complaints, why should the Doctor himself have imbibed an idea that he was infected with the prevailing disease on the morning of the 20th, when he spoke of pain in the finger while washing his hands, and of general shivering? Now in his mind there was an evident conviction, that the local pain and rigors were connected as cause and effect.

Why did he not complain on the preceding evening, (19th) when the scratch was made, if mental apprehension created the pain? His symptoms were in unison with those expressed by other people, who have been wounded in dissecting. But in his case, we have no record of any other wound; and, therefore, we must direct the whole force of our enquiry to this scratch or puncture, slight as it appeared to be both in depth and length, and consider it as a breach of surface adequate at least to produce all the purposes of inoculation.

The simultaneous concurrence of pain in the injured finger, and of rigors, might have increased the apprehension pre-existing in the Doctor's mind; but the disturbance of his mind could not, *e contrario*, have produced the pain in his finger and the rigors.

This primary point being established, as I conceive, we come next to enquire into the connection which existed between the local injury and the constitutional disturbance—for these were synchronous and co-existent, appearing in the order of priority and sequence, or as cause and effect—the finger first attracting the Doctor's attention, and then the general indisposition. If this reasoning be not admitted, the coincidence was remarkably strange, that the fever should have ap-

peared in this connected order, after the receipt of the local injury.

The same mental concern or anxiety, or whatever term we give to our vexations, existed about the patients, equally before and after the puncture. But why the febrile disturbance should have been suspended until the infliction of this scratch, if there was no real connection, we are at a loss to imagine.

It may be presumed by some of my readers, that I am here arguing a point unnecessarily; but a report has been generally circulated, and, of course, credited to a certain extent, that the disturbed state of Dr. Bell's mind destroyed his life, and that the scratch was too insignificant, and too passive in itself, to merit attention. But, as I cannot subscribe to this opinion, I wish to give an equally impartial consideration to each particular view of his disorder.

I have no theory to support, no prejudices to foster, on this head; and if I had, my regard for the integrity of the evidence, and the attainment of truth, would induce me, I hope, to consider, with equal attention, all the circumstances which bear, either immediately or collaterally, on the important subject now under consideration.

This part of the enquiry claims our especial attention, for if we assign all the malady to

mind, the treatment would be conducted *morally;* but if we ascribe it partly or wholly to the body, our treatment should correspond, of course, to the views embraced on this head. It will be, therefore, of vast importance in our future practice to determine, accurately and decidedly, on the manner in which we may dispose of and settle this question, without deceiving ourselves or the public in general.

I would ask, does anxiety of mind usually create pain in the pectoral muscle? Or, are pains in the sacrum and loins common symptoms of mental disturbance? If so, why did not these pains declare themselves before the application of any adventitious injury?

Why should the right pectoral muscle have been affected, rather than the left, near the course of the absorbents and nerves, passing from the right, or injured finger, into the body, if the origin of the whole disease was in the mind?

It cannot be supposed that those ailments were imaginarily created. They were real, and dependant on some powerful excitants.

On the other hand, does analogy lead us to infer any thing from the injury? The answer is---certainly. The parts around the scratch were not inflamed, it is true, neither was there any connection apparent between this

injury and the pectoral or sacral affections. And is it possible, then, there could have existed that dependence and connection which constitutes cause and effect? Analogy warrants this conclusion.

A dog, unknown to be rabid, bites a child or an animal, "*quibus non est intellectus*," in which mental influence has nothing to do with the sequences: the wound heals, and no notice is taken of it: in the course of time, perhaps of some weeks, a series of symptoms appear, which constitute the disease called Hydrophobia. There is a dread of water; there is a spasmodic affection of the throat, with a sense of pain in the æsophagus; and there is fever—symptoms which soon destroy the patient. *Miserrimum genus morbi, in quo simul æger et siti et aquæ metu cruciatur**. In such a case we should have no doubt that the bite of the dog, though it never received, perhaps, any surgical application, produced the disease so termed Hydrophobia†.

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* Celsus de Med., fib. v., cap. xxvii—2.

† The reader may find examples of this illustration in the following works:—

Art. Hydrophobia and Dog, in Rees's Cyclopædia.

Dictionnaire des Sciences Med. tom. 47.

Cooper's Surgical Dictionary, 1822.

James on Canine Madness, 8vo. Lond. 1780.

Dessertatio Medica Inauguralis de Hydrophobia, auctore Donaldo Butter, Edinburgi, MDCCCXX.

I do not mean to say, however, that Dr. Bell died of Hydrophobia*, nor of any disease like it, as I only desire here to call attention to those terrific effects, which arise sometimes from trifling local injuries. Neither do I mean to discuss the subject of poison, or of simple irritation in wounds of this nature, until a future opportunity shall present itself.

And are we not to allow something, then, for the scratch on Dr. Bell's finger?

Viewing it as an insulated case, we might not come to this conclusion; but let us search the archives of Medicine and Surgery, and a multitude of similar facts will present themselves.

Dr. Colles, one of the Professors of Anatomy and Surgery to the Royal College of Surgeons, in Ireland, has published in the *Dublin Hospital Reports*, vol. 3, 1822, the cases of Professor Dease and two Pupils, who suffered severely from slight wounds received in dissection, with some judicious and appropriate remarks. To this work, which is otherwise replete with useful facts, I beg to refer the reader. The case of Professor Dease appeared to me to bear so closely on Dr. Bell's,

* I may here remark a circumstance, which occurs at the moment, that no case of Hydrophobia has been seen, in the neighbourhood of Plymouth, during the last ten or twelve years, if my information be correct.

that I have thought fit to transcribe it in the subjoined note*.

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* "On Saturday, February 13th, 1819, Mr. Dease, late Professor of Anatomy and Surgery to the Royal College of Surgeons in Ireland, lectured on the cervical nerves and brachial plexus. The subject (which was dissected for him), a female about forty years of age, had died in one of the Hospitals of a chronic pulmonary affection; the body had not been buried, and was nearly fresh, for she had not been dead above 48 hours.

"On the morning of Friday, when she had been just brought into the College from the Hospital, I saw the throat opened by Mr. Shekelton, who called my attention to a brown thick fluid contained in the pericardium. The lecture was delivered at *one o'clock* on Saturday by Mr. Dease, and on Sunday morning early he awoke with a violent shivering, and sickness of stomach; the former was very severe, and the latter continued for upwards of two hours. He threw up his dinner, consisting of fish, of which he had eaten very freely, and afterwards he vomited a large quantity of bile. Even at this time, he complained of acute pain in his left shoulder. His friend Dr. Sheridan saw him early this morning.

"He sent for me at half-past eleven o'clock, and earnestly besought me to bleed him for this pain of the shoulder, which he described as very severe, and as aggravated by the slightest attempt to move the arm. I found him at this time labouring, as I supposed, under high symptoms of the prevailing fever, and conceiving that his complaints of the arm were in some measure the effects of impatience, I declined bleeding him unless by the desire of his physician. At 3 o'clock, P. M. I again saw him, and although I still was of opinion that he was affected with common fever, attended with derangement of the stomach and liver, greater than ordinary, yet I could no longer resist his importunate solicitation to be blooded, and I took away nearly

Professor Dease scratched his finger in dissection, on a Saturday, about one or two o'clock, P. M.

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twenty ounces of blood from his arm by a large orifice; the blood flowed freely. He thought himself relieved of the pain in the shoulder while the first cup was filling, but this was probably ideal, as he did not express relief towards the conclusion of the operation, and as I found his pain not at all mitigated at 9 o'clock, P. M. when the fever was as high as it had been at any time of the day. The blood was neither buffed nor cupped, and the proportion of serum was considerable. I now observed a slight fulness above the clavicle, along the left side of the neck, in the space between the sterno-mastoid and trapezius muscles, and being in doubt whether this apparent fulness might not be owing to the position of the head, which was held rather towards this side, I wished to satisfy myself by the touch, but on applying my finger even with the slightest pressure, he complained of exquisite pain.

"Monday morning, February 15th. I was called upon at 8 o'clock this morning to see him, and found that he had spent a very restless night, owing to the pain of his shoulder, and when I went into the room he had the entire of the joint covered with leeches, to the amount perhaps of 100. We advised a draught with elect. scam. fomentations, and opiate-liniment. At 5 o'clock, P. M. we met again, Dr. Sheridan, Dr. Brooke, Mr. Richards, and myself. We learned that the draught was rejected, almost as soon as it had reached the stomach, and although the pills had brought away some liquid stools, yet the fulness of the abdomen remained unreduced. No relief has been derived from the fomentations and liniment. Repeat the pills, and assist their operation by enemata.

"Tuesday morning, 16th. Bowels have been more satisfactorily freed; symptoms however remain as yesterday. We felt at a loss to account for the pain of the shoulder, which however

Dr. Bell wounded his finger on a Sunday, about five or six o'clock, P. M.---the former

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was less severe. We advised him to persevere with the use of purgatives, giving him the inf. sennæ et tamarind, with tinct. jalapæ.

9 o'clock, P. M, On visiting him this evening he accidentally mentioned an uneasiness, which he felt in his left side. On examination I discovered a colourless swelling on the side of the thorax, a little behind, and below the posterior border of the axilla; upon which the recollection of Hutchinson's case at once occurred to my mind. On my suggesting to him my suspicions of the cause of his sufferings, Mr. D *denied his having received any cut, of which he was so positive as almost to refuse to let me examine his hand.* I discovered on the dorsum, rather towards the ulnar side of the second joint of the thumb, the mark of a slight scratch, not one-fourth of an inch long; this formed the diameter of a vesicle, which was almost half filled with a fluid of a milky whiteness and consistence, and about this size

I should have observed that the pain of his shoulder was better on Monday night and Tuesday morning, so that he was not (as on Sunday and Monday morning) fixed to one spot, but he could now lie with his body slightly turned towards the right side, and could raise himself in the bed, by pulling, with the left hand, a cloth tied to the foot-post. The skin above the clavicle, at this time, bore pressure very well; the skin at the swollen part of the side was not discolored, but was possessed of the most painful sensibility to the touch. It should be observed that every evening, about 6 o'clock, he had an exacerbation of restlessness and depression of spirits.

Wednesday, February 17th. This morning we resolved to give a bolus of calomel, with a liquid purgative, and at night a draught with 25 drops of laudanum.

was attacked, early on Sunday morning, with a violent shivering, and sickness of stomach;

Thursday, February 18th. The discharges from the bowels in the course of yesterday were very free and natural. He slept for four hours after taking the draught, and awoke cheerful and refreshed. He was directed to take a bolus of carbonate of ammonia, together with some diaphoretic medicine, also to foment the side, and rub it gently with a liniment of camphorated oil and aqua ammoniæ. Draught to be repeated at night with 40 drops of laudanum.

Friday, February 19th. Had a very bad night; some delirium this morning, but is now, at half-past eleven o'clock, more composed. Face with a yellow tinge; countenance sharp, yet not indicative of much pain or inward distress; pulse smaller. He desired me to look at the right arm, which had been blooded. I found the incision inflamed in the ordinary way; but I remraked on the forearm, about two inches below the incision, a small vesicle containing a fluid like that produced by the original wound on the thumb.

N. B. This vesicle did not increase in size, or alter in any way, until the time of Mr. Dease's death.

Saturday, February 20th, 1819. At our visit this morning (11 o'clock) we observed his manner quick, and bordering on delirium. Pulse 126, and smaller. The entire side, from a very little below the axilla, down to the hip, was swelled.

This day we observed the swollen part studded pretty thickly with small elevations, to the eye like vesicles, yet hard to the touch. They bore a resemblance io the elevations which arise in the cicatrices of a part which had been scarified, when it is affected with swelling.

An erysipelatous blush, which had been first observed on Thursday, and had rather increased on Friday, was now more strong, but occupied only a small portion in the middle of the

and the latter, before noon, on Monday, with violent shivering, and sickness of stomach.

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swelled side. Tongue covered with a white coating; countenance less yellow than yesterday, but still contracted and small; abdomen full.

Saturday evening, 9 o'clock. Delirium set in soon after our visit. and has continued high; perspiration warm and rather general; however the left side of the trunk of the body, where the clothes lightly cover him, is quite dry, though warm; pulse weaker; the swelling has passed more from the abdomen towards the back; erysipelatous redness more extended and more strong, occupying a considerable portion of the side; bowels free. Although the perspiration is warm, while he remains covered, yet if his hand remain uncovered for a few minutes, it feels cold and clammy.

Sunday morning, February 21st, 9 o'clock, A. M. At ten o'clock last night he took tinct. opii gutt. xl, but the delirium continued for three hours after it; he insisted on being moved to an adjoining bed, and there he lay for nearly three hours, without any clothes. On being again laid in his own bed, he was stupid, and his left leg was stiff; countenance still sharp, but not yellow; lips of a good red; he has clammy sweats on the head and upper parts of the body; frequent deep inspirations, like sighing; pulse 126, and weak. Wine negus, with nutmeg.

12 o'clock. General state as at 9. Inflammation of the side extends up to the axilla; and on the posterior edge of the axilla appears as if there was an abscess, but is without fluctuation; color of the inflamed part darker; he has passed no urine since 9 o'clock last night, although he had an enema this morning. We advised a poultice to the side, a bolus of scammony, calomel and jalap, and cordial draughts every two hours. We now observed a swelling on the anterior part of the right arm, occupying about a hand's-breadth of the belly of the flexor

Fever appeared in each person, and both were blooded. The blood in neither instance was buffed nor cupped.

Pain in the shoulder was felt by Professor Dease on Sunday, (2d day,) and by Dr. Bell early on Tuesday, (3d day.) The former had 100 leeches applied to his shoulder, and the latter was blooded a second time from the arm, on the third day.

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muscles, beginning about an inch and a half below the orifice made in bleeding him. The vesicle on this arm remains as when first observed; a poultice to this swelling.

5 o'clock, P. M. We agreed to puncture this tumor, although he appeared approaching fast to dissolution. A quantity of serous fluid, nearly a tea-spoonful, flowed from the opening, but did not, in the slightest degree, reduce the swelling.

Sunday evening, 9 o'clock. Pulse in right wrist not to be felt; heat of limbs not reduced; breathing quick and laboured. He passed urine at five o'clock this evening, and at ten o'clock he died.

Monday morning. I was called early this morning to examine his body, as one of his pupils, who remained in the room, fancied that he heard him breathing. I now observed that two or three vesicles of this size had formed on his back; the swelling had extended down the thigh; the left arm was swelled, and rather hardened from the elbow nearly up to the shoulder; this swelling was chiefly along its anterior surface, but it could also be felt all around, yet there was no redness or vesication on the limb,

Along the left side of the trunk the raised hard spots still continued as in life.—*Dr. Colles on fatal Consequences resulting from slight Wounds received in Dissection.*

On the 4th day after the accident, the Professor had an uneasiness with a colourless swelling on the posterior side of his thorax, and the Doctor suffered excruciating pain in his back and sacrum.

On this (4th) day the scratch was first discovered by Dr. COLLES on Professor DEASE's thumb; but he was so unconscious of "*having received any cut*," as almost to refuse an examination; and therefore this injury, which, no doubt, was the origin of his complaints, and the cause of his death, could not have affected his mind in the slightest degree.

Whereas, in Dr. BELL, the scratch by some people might be left entirely out of the question; and by others allowed only to have augmented that pre-existing anxiety and apprehension, which is supposed to have ultimately terminated his existence.

Now so much as we allow for the one person, we must allow for the other. And if Professor DEASE's state of mind had no influence whatever over his disorder, why should the whole of Dr. BELL's disorder, which resembled the other in its kind, origin, and course, be referred entirely and exclusively to his mental impressions?

Dr. BELL was aware of the time when he punctured his finger, but expressed no apprehension for his safety, until the following

morning, when he felt a soreness in washing his hands, accompanied with shivering, and immediately alarmed himself for the result.

Mental influence, therefore, might have operated in increasing the severity of Dr. BELL's symptoms, but could have produced no effect on Professor DEASE, whose case must be considered very parallel with the Doctor's.

On the 5th, 6th, and 7th days, there arose a swelling, and hard elevations, like vesicles in appearance, with an erysipelatous blush, on the Professor's side; and, on the 8th, (the day of his death,) also a swelling on the affected arm, on which a vesicle had previously formed. These symptoms were, of course, wanting in Dr. BELL, because he died on the 5th day. Indeed the game was lost on the 4th day, (23d) and he was a dying man on the whole of the 5th day, (24th,) for for a space of 17 or 18 hours.

The Professor lived 200 hours, or about $8\frac{1}{2}$ days, after the accident, and the Doctor only 121 hours, or about 5 days; so that there was a difference of 80 hours, or thereabouts, in the duration of their complaints.

Had the latter survived to a greater length of time, we might fairly infer that vesicles, or similar elevations, or an erysipelatous patch, which only appeared on the Professor

during the last 80 hours of his life, might also have broken out in the Doctor. If we cannot draw such an inference, we are never warranted in forming any prognostic whatever in the practice of Physic.

The same disease, when epidemic, varies in different people. SYDENHAM has remarked, that when the Plague prevailed in London, all patients were not affected alike, for some died on the first invasion*. We see this variation occurring every year in the measles, and the other exanthemata, and sometimes even in puerperal fever.

Now these vesicles or blushes are only indices of great febrile action, of high nervous excitement, and much constitutional derangement. A disease may be essentially and specifically the same without as with these appearances, which can only be regarded as characters in forming nosological distinctions.

The similarity of Professor DEASE's symptoms with those of Mr. HUTCHINSON, led Dr. COLLES to look for a corresponding cause in him, which had not been previously discovered or suspected.

Mr. WILLIAM HUTCHINSON, a pupil of delicate constitution, scratched his thumb with a

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* De febribus continuis et intermittentibus, de variolis, et de Peste, 12mo.—1676.

dissecting knife, on the first of December, 1818, when opening the body of a person who had died of *Cynanche Laryngœa.* Dr Colles says, "on the evening of this day he was "drowsy, and retired to bed earlier than "usual; the next morning he complained of "head-ache, sick stomach, and of *a most* "*acute pain in the right shoulder and axilla.* "In the course of the day these symptoms be-"came so severe, that he was desired to "take an emetic, which, after a short inter-"val, was followed by a purgative medi-"cine."*

A pustule formed on the scratched part; but there was no connection, nor inflamed absorbents, on the arm between the scratch and the shoulder. The pain was so agonising, and the fever so violent, that neither leeches, fomentations, nor opium, afforded any relief. An erysipelatous redness appeared on the 8th day, between the axilla and the os ilium, and across the abdominal muscles towards the groin; and the skin became doughy or œdematous, with hard elevations, resembling vesicles to the eye, but more like leech bites long healed; and then the fever began to abate. In him there was a vast waste of strength. Large quantities of wine were given; but he was not blooded from the arm.

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* Dublin Hospital Reports, 1822—p. 204.

On the 15th day an incision was made over the 4th and 5th ribs, but neither matter nor lymph was found. At the end of three weeks, when the pain of his shoulder had left him, he began to feel an induration on the inner edge of the biceps muscle, extending towards the pectoralis and latissimus dorsi muscles. An opening was also made on the 1st of January, 1819, into this induration, but only a small quantity of matter escaped.

After this an abcess formed over the 6th rib, not far from the spine. From thence his recovery began; but he had not completely regained the use of his arm at the end of February, nearly three months after the accident. During his illness his spirits sunk, he raved often, and his strength wasted so fast that he could scarcely struggle through it.

The reader will not fail to notice the desultory nature of Mr. HUTCHINSON's disease, beginning with a slight scratch on the thumb, operating quickly on the stomach and sensorium, establishing pain in the shoulder, throwing out erysipelas on the side, then raising a tumefaction over the biceps muscle, and ultimately returning to the side.

Now we shall see that, although a most striking similarity has been traced in the symptoms of Dr. BELL, Professor DEASE, and Mr. HUTCHINSON, so far as their diseases went

together, yet an equally remarkable modification may be observed of the same sort of disease, of which the Professor died, occurring in another person.

Mr. Egan, a pupil, dissected a part of the same subject, after the Professor's Lecture, on Saturday. On Sunday he was attacked with rigors and fever, but danced, though ill, on Monday.

On Tuesday an erysipelatous redness appeared on his thumb, and pains were felt along the fore arm, followed by hoarseness and fever.

On Friday he first "*complained of tender-*"*ness under the border of the pectoral muscle,*" and a gland could be felt enlarged under the ridge of this muscle.

An abcess in the axilla was opened on the 28th, and he ultimately recovered.

No note is made of any puncture or scratch, but some local injury was probably inflicted on his thumb. He was not blooded for these complaints.

I have seen the difficulty throughout of referring the pectoral and lumbar pains to the scratch on the Doctor's finger, owing to the want of any intermediate connection on the arm; but this desirable demonstration was not absolutely necessary in accounting for the phenomena, as we have removed the difficulty,

I conceive, in a great measure, by the recital of these analagous cases.

The wound in Professor DEASE was not *a quarter of an inch* in length, in Mr. HUTCHINSON *a sixth*, in Mr. EGAN not assigned, and in Dr. BELL about *a third of an inch*.

Both the Professor and the Doctor lost blood from the arm, and if any relief was thereby afforded, certainly no effectual opposition was made to the progress of their diseases. Neither Mr. HUTCHINSON nor Mr. EGAN were blooded, except the application of some leeches to the former, and both recovered, although their exhaustion was excessively great. It should be also added, that the two last-mentioned persons were younger, and more capable than the former, of sustaining the debilitating consequences of such a formidable disease.

In conclusion, however, it ought to be understood, that I do not deny the influence of the mind over the body, for I well know the effect of the depressing and exciting passions—that anger will make a person's heart and arteries beat with tremendous force, and fear render their pulsations nearly imperceptible: that anxiety can hurry, and sorrow retard, their vibrations;—how hope and joy can animate, love and desire exhilarate, our feelings.

The bodily health materially depends on mental tranquillity; and corporeal maladies, long endured, can ruffle the sweetest temper, or the most intellectual mind. A person may sit down to dinner with a keen appetite and good cheer—let sad news unexpectedly arrive, and both forsake him.

I can also enter into the feelings of that Physician, whose peace had been long harrowed by untoward events; whose efforts to preserve human life had been abortive; and whose skill, which had never been impugned, was now estimated by the extent of his success.

A continuance of anxiety and concern might have altered the manner and conduct of the late Dr. Bell; but there appeared in him, on the very day of the local injury, the "*mens sana in corpore sano.*"

If I might be allowed, then, to offer any solution of his disorder, and I would do so with due deference to every other opinion which may be expressed, after all the thought and attention I have bestowed on it, I would say, that the state of his mind had probably deranged the functions of his stomach, or other organs, and rendered his constitution highly susceptible of irritation, communicable by the slightest injury;—and that to a habit of body so previously prepared for

excitement, the local injury had operated like a match in kindling latent propensities into a rapid, destructive, and fatal action.

Case 10.

John Walkie, æt. 38, shipwright, generally healthy, of a darkish sallow complexion, temperate in his living, married, with five children—residing in Dock-wall, Devonport.

On Monday, the 13th of September, 1824, when working on board his Majesty's ship Gibraltar, in Hamoaze, he slipped into the pump-hole, and received a slight abrasion above the internal malleolus of his right leg. He continued at his duty without noticing particularly the injury he had received, and, after his return, applied at the Surgery in the Dock-yard, where he received light dressings for his leg, and continued daily at his work until Saturday, the 18th, when he complained of some pain in the injured part of his leg, on which a superficial slough had by this time formed. He was ordered to remain at home from work, and to poultice the part.

19th, (Sunday.) Leg easy from the rest given to it.

20th. Still easier.

Mr. Dryden, owing to his close attendance on the late Dr. Bell, could not visit Walkie

from the 20th until Saturday, the 25th of September, when his health appeared to be good, and the slough gradually separating.

Thursday, (30th.) The slough removed; the ulcer being clean and granulating, was dressed with sticking plaister and bandages. Health undisturbed.

October 1st, (Friday.) Mr. PRICE visited WALKIE, and reported him to be perfectly easy. Sore dressed as before, with sticking plaister.

Eleven o'clock at night. Mr. DRYDEN was sent for, in consequence of WALKIE's feeling great pain in his leg, on which were now observed red lines extending up to his groin, where the absorbent glands were tender.

He complained of shivering, and pain in the back part of his head. The dressings had been removed, and poultices applied; after their removal the leg became easier, and the redness less vivid. He expressed great apprehension for his safety. Pulse 90, and rather full; tongue moist and clean; skin natural. Took some aperient medicine, which was in the house, and on the following morning cathartic pills and mixture.

Saturday, 2d of October, *twelve o'clock, noon.* Head-ache severe, particularly over the Os frontis, and increased by the slightest movement. There was intolerance of light,

with a flushed countenance, hot skin, and considerable thirst; pulse 110, and full. His bowels had been freely purged; leg easier, the redness scarcely perceptible.

Venæsectio ad ℥ xxx.

Eight o'clock, P. M. Not relieved. Mr. C. Tripe, Surgeon, at Devonport, being now consulted, agreed on a repetition of the blood-letting.

Repetatur Venæsectio ad ℥ xxiv.

The following medicines were also directed :—

℞ : Hydr : Submur : gr. x.
Conf : ft : Bolus st : sumendus.

℞ : Hydr : Submur : gr. iij.
Conf : q : s : ft : Pil : 3tâ quâque horâ sum :

The head was shaved, and covered with evaporating lotions ; 12 leeches were applied to the temples, and a blister to the epigastrium.

Sunday, 3d, *eight o'clock, A. M.* Night tranquil ; head-ache relieved ; alvine discharges numerous and offensive ; slept at intervals, but felt pain in his bowels. There is now considerable tenderness over the abdomen, particularly in the right hypochondrium ; and it appears evident that a metastasis of disease has taken place to the

peritonæum. Pulse 130, and small. Tongue moist, and slightly coated. Leg easy.

Rep.r Venæsectio ad ℥ xxij.

Syncope followed. The blood in every instance was buffed and cupped.

℞ : Hydr : Submur : gr. x.
Ext : Opii gr. iv.
Ant : Tart : gr. j. Confect : q : s :
ft : Bol : statim sumendus.

℞ : Hydr : Submur : gr. iij.
Ext : Opii gr. ½.
Antim : Tart : gr. ¼. Confect :
q : s : ft : Pilula 2dâ quàque horâ sumenda.

Ten o'clock, P. M. The tension and tenderness of the abdomen increased. Pulse regular, rapid, and small.

Admov : Hirudines xxiv, et post aliquot horas
Empl : Lyttæ, Abdomini.

Enemata were also ordered frequently.

Monday, 4th, *eight o'clock, A. M.* Passed a restless night, appeared sometimes incoherent, and conceived phantoms of objects before him; but when spoken to he would answer questions rationally. He had several slimy and offensive stools, and passed a copi-

ous quantity of urine. The tension and tenderness of the abdomen lessened. Pulse 110, and soft. Hopes of his recovery were still entertained.

Continued his Calomel and Opium every 3d hour.

Six o'clock, P. M. Symptoms all aggravated. An occasional hiccough has troubled him.

Hirudines xxiv. Abdomini.
Balneum tepidum posteà.

Ten o'clock, P. M. Perspired copiously, and bled freely in the bath. Feels more comfortable. One alvine evacuation, which he had just passed, was partly feculent, gelatinous, and tinged with blood. Pulse still rapid, but firm and regular. The following draught was ordered for the hiccough, but only a small portion of it given.

℞: Tinct: Opii gtt. lxxx.
Aquæ Menthæ ℥j. M;

Tuesday, 5th of October. Another restless and sleepless night; frequent discharges from the bowels, mixed with mucus and blood; perspiration free until morning, when an icy coldness pervaded the extremities. Pulse no longer distinct; skin cold and clammy; onguet moist; lips and mouth exsanguine;

countenance sunk; all hopes gone. Bottles of hot water were applied to different parts; warm wine given frequently, and the following mediciues ordered:—

℞: Ammon: Carbonat: gr. vi.
Confect: Aromatic: ℈ j.
Aquæ ℥ i. M: ft: Haust: st: sumend:

℞: Mistur: Camphor: ℥ viij.
Ammon: Carbonat: ʒ i.
M: Capt: cyathum parv: subinde.

He continued in a low and wandering state during the day, occasionally fancying that leeches were crawling over his bedstead, and sometimes muttering incoherent words; but withal he replied sensibly to certain questions addressed to him, and made some arrangements respecting his family.

He gradually sunk about *half-past seven o'clock* on this evening, being rational until the last hour of his life.

EXAMINATION.

The body was inspected 21 hours after death. Emaciation great. The omentum was highly vascular and dark coloured. The whole of the intestines slightly inflamed, but particularly the ileum and cæcum, and there was a quantity of sero-purulent fluid found in the

pelvis. The kidneys, bladder, spleen, and stomach, healthy. The right lobe of the liver was turgid with blood, exhibiting marks of recent inflammation.

Had the examination been extended to the Encephalon, I have no doubt that evidences of disease might have been discovered there; but as the brunt of the attack was confined to the abdominal viscera, I was only anxious to ascertain how far active measures had succeeded in arresting its advancement on these organs.

An incision was made into the affected leg, and extended from the ulcer towards the calf, but no traces of inflammation were observable in the cellular substance.

REMARKS.

Walkie had a slough formed on his right ankle, some days after an abrasion, which was produced on the 13th of September.—Sloughing, or the death of an injured portion of skin, would not have ensued, in all probability, at that identical spot, had there not been the provocation of a blow. The simple act of sloughing shewed a tendency in the parts so injured to assume an unhealthy action, and to perish; whether derived from an inability on the part of the constitution to

sustain at that particular time, and to repair in the regular way, the effects of the injury, or from the violent application of the force so communicated.

Superficial sloughs or eschars do, however, follow such accidents, frequently in the Dock-yard, without these attendant consequences.

A suspicion cannot and does not rest against the wood around the pump-hole, that in it or upon it there could have been lodged any specific virus, which, at the time of the blow, could have been applied to the skin, because the stocking intervened. Nor should it seem to be at all probable that any poison could have been contained on the worsted stocking, which he had usually worn.

It is said that pain first attacked his leg on the 18th of September, five days after the abrasion, but that he became easier until the 1st of October, when the disease, of which he died in five days, actively commenced; so that there was a lapse of seventeen days, during which period the disease lay dormant, making in all twenty-two days after the injury.

We recognise in this history a tendency in the disease to come into action on the 18th of September, but it appears that there was not sufficient force at that time. And as the fever sprang up so soon after the application of sticking plaister, the ulcer yet

healing, and was mitigated by the removal of the straps, a supicion might arise against the qualities of it; but we have ample evidence to acquit the sticking plaister of any concern in the production of the disease, as the same sort of dressing was often applied to other patients with ease and safety.

Now the sticking plaister used in the Dock-yard is made in the common way, and applied to a great number of patients: it might have irritated the ulcer, but could not have proved the cause of the fever, because the latter advanced after the removal of the former. At a loss, therefore, for any chemical agent, which could have killed a piece of skin, and created such constitutional disturbance, we must be disposed, until further evidence can be brought, to regard the action of the blow altogether in a mechanical point of view.

A feverish excitement sometimes follows the application of caustic to the skin, but there is never seen the sort of fever witnessed in WALKIE.

The redness of the absorbent vessels, emerging from the ulcer, and running up the thigh to the groin, appearing for so short a time, and becoming evanescent, is also another remarkable circumstance.

I consider WALKIE'S to be one of the most important of all the cases. The treatment

was conducted with energy and decision. He lost between 70 and 80 ounces of blood from the arm, and had applied 60 leeches, which might have drawn about 30 or 40 ounces more, making in all 100 ounces at least, besides two blisters. He took about $\frac{1}{2}$ a drachm of calomel in 24 hours, with the addition of opium and antimony; yet the disease was neither stopped, nor turned out of its course, nor altered in its character, nor deprived of its malignity. It was essentially and radically the same disease after as before the loss of blood, although some of its energies might have been mitigated with the depression of the vital powers.

A question may arise, if the treatment was commenced early enough? I confess, in my own view, there was no time lost—for the disease set in violently on the Friday night late, and on Saturday, antiphlogistic measures were vigorously commenced. The loss of 30 ounces of blood ought to have made some impression on the disease; but, no—the patient was *not* relieved, and therefore Mr. Dryden, who had now become *charge d'affaires*, very properly was actuated by his usual candour in calling in Mr. Cornelius Tripe, whose abilities as a surgeon stand very high in the town of Devonport, to witness the progress of the disease with him, and to assist by his judg-

ment the plan of treatment which had been struck out. There was no difference of opinion, either as to the nature of the disease or to the treatment to be adopted; and both agreed that the further loss of blood was necessary; so that 54 ounces of blood were drawn off on the Saturday, within 24 hours after the active commencement of the disease.

Now on Saturday it is said, that the head-ache was relieved; but a question may arise, whether this relief was obtained from the loss of blood, or from the offensive discharges, which, probably, were expelled by the medicines? But there was an exchange of one complaint for another, of the head-ache for an abdominal affection, which advanced as the other disappeared; or, in the language of the author, there was Metastasis.

He again lost blood on Sunday, and was freely calomelised; but the abdominal affection did not obey the intention of these measures, for the tenderness of the viscera had increased at 10 o'clock on that night; so that 24 leeches, a blister, and enemata, were ordered.

These measures had not removed any portion of the malady on Monday, when it was found to be still advancing in its worst form, viz. by disturbing the sensorium, and by unsettling that harmonious connection, which

naturally exists between perception, association, and ratiocination. But though the mind wandered and ruminated over its own cogitations, it could be set steady and right, for a short time, by pertinent and well-directed questions.

Towards the evening of Monday, the abdominal tenderness lessened; but that direful harbinger of dissolution—Hiccough—here appeared, which neither the fresh application of leeches, nor the warm bath, nor opium, completely removed. When this spasmodic affection of the diaphragm and stomach, occurred at an advanced period of the disease, no patient recovered On Tuesday the symptoms of death were more manifest, and the disease pursued its own intractable and disobedient course, and destroyed its victim about the evening of this day.

The bloody and mucous excretions were not the effect of disease in his bowels, but probably of the medicines acting on, and augmenting the secretions of their villous coat.

As symptoms increased, or the disease advanced, so were the antiphlogistic measures repeated and proportioned to the exigencies of the case. Such a prompt and decided course of treatment ought to have been rewarded by a more successful issue; but the

result must clearly point out to every candid enquirer, that even the timely abstraction of blood, either in large or small quantities, does not check the progress of morbid actions like those under our immediate consideration. The bowels were emptied, and the blood-vessels partly unloaded of their contents, but the malady remained.

If a patient labours under any disease, his constitution is tried by the action of that disease; and if he submits to certain means, proposed as remedies, the intention of those means must be either to oppose or eradicate the disease, against which they are directed, or to assist the constitution in overcoming it.

This is the fundamental principle of the medical profession. The art of healing is engrafted on observation, and cultivated by our discrimination between good and evil. Says Celsus, "*Ut alimenta sanis corporibus agricultura, sic sanitatem ægris medicina promittit.*"* The intention of medicine is to do some good, either by assisting the forces of the constitution, or by expelling disease; and if medicine, or, I mean medicinal means, can neither remove nor tranquillise a malady, there is no use in trying them.

I say, that if a patient consents to lose 100

* Lib. 1.

ounces of blood for the cure of any disease, he ought to be some gainer by the exchange; he either parts with his blood, in order also to get rid of his complaints, or his constitution ought to be so subdued and altered by the loss, as to be rendered more secure and more capable of sustaining that disease than it was with the whole quantity of blood in the system.

Now if I had not a firm conviction of curing or benefitting a patient, I would neither take from him one ounce of blood, nor prescribe a single grain of medicine. Censure on the imbecility of our profession may be often escaped by this prudent reservation of its powers.

Walkie died, it is true, after five days' constitutional irritation; and the examination of his body revealed the common train of mischief witnessed in the other men, viz. inflammation of the ileum and cæcum, with an effusion of sero-purulent fluids into the abdomen.

These appearances *post mortem*, and a sizy state of the blood are, I know, the strongest possible arguments with medical men, either for recommending or repeating the loss of blood. We draw blood, and it is sizy; we bleed a second, a third, and a fourth time, or even further, and the blood is still sizy. We judge it prudent to cease—

well, and what have we done? We have abstracted a given measure of blood from the body, but the remaining portion is still as sizy as that drawn; and, although we have diminished the quantity, we have not ameliorated the quality. The remaining blood is still characteristic of inflammation. Nay, we may even bleed a person until his blood becomes both buffed and cupped.

We ought also to be certain that the loss of blood will arrest an existing tendency to effusion of lymph or of purulent fluids. But we are not even certain of this point.

We often infer, in inflammation of the brain and viscera, that we have prevented effusion and death, by full, free, and repeated bloodlettings; but we can give no direct proof of our assertions, nor of the value which we ourselves attach to, and lead others to form of, our practice, for we have not had ocular demonstration of the morbid changes which occurred in these parts.

The best proof we can adduce may be seen in ophthalmic diseases. But will not bloodletting prevent an effusion of lymph in the eye? I say---not always. In some cases venesection is nugatory. Since the opening of the *Plymouth Eye Infirmary*, we have seen frequent examples, out of nearly 2,000 indigent patients who have applied there, in which

effusion either had taken place or would have occurred, and in some of the patients blood-letting had been freely tried with no manifest advantage; yet we can stop this process, and remove its effects, by medicine, without the loss of blood*. The eye is the best index we can take for rectifying our opinions of diseased actions.

I am not here considering the cases which require blood-letting, and regulate the manner, or the quantity to be taken, as I only desire now to call attention to certain guides, which may prove extremely fallacious to medical men, who ascribe too much to them, and allow too little for that nervous disturbance which accompanies these pathological appearances.

It is neither the quantity of lymph, nor of fluids, on the brain or viscera, that destroys vitality; for in dropsies we see these organs overwhelmed with water, and the patients capable of exertion; but it is that accompanying excitement and expenditure of the nervous energy with which life sinks, and to which I shall hereafter direct my especial attention.

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* The reader is requested to refer to my address on the Plymouth Eye Infirmary, and Diseases of the Eye.—1821.

Case 11.

William Reeves, æt. 44, labourer, a tall and healthy man, temperate and regular in his habits, residing in Trafalgar Court, Dock-wall, Devonport.

On the 9th of October last, he slipped from a piece of English Oak timber, in the Dock-yard, and slightly grazed the skin over the tibialis anticus muscle and shin bone of his left leg;—the wound was considered too trifling to lay him up from his duty; he, therefore, continued at his work, but applied daily at the Surgery for dressings until Monday, the 25th of October, when the ulcer was thought to be sound.

On the 1st of November, (Monday) he re-applied at the Surgery with the same ulcer, about the size of a split pea, surrounded by inflammation, having been on the Dock-yard watch during the whole of the preceding (Sunday) night, when he felt pricking and painful sensations in his leg, accompanied with symptoms of approaching indisposition. Light dressings and poultices were applied, and some opening medicines given in the evening. During the night he became very hot and feverish, and perspired freely, owing to some warm herb tea, which he had drank for that purpose.

2d, (Tuesday.) He still returned to his duty; but towards night the leg became so very painful, that he had some difficulty in getting home. Poultices were continued.

3d, (Wednesday.) On this day he was prevented from attending the Surgery, or even from leaving his room, by an erysipelatous redness, which occupied the inner side of his left leg, and created such agonising pain and tenderness, that he had not only been deprived of rest during the preceding night, but of the power almost of standing on it. The absorbent vessels were inflamed along the inner part of the knee and thigh to the groin, where the glands were enlarged, and exquisitely painful to the touch. The ulcer still kept clean and granulating; pulse 90; bowels open; tongue clean and moist, although langour and nausea prevailed. The topical applications were continued, and purging pills then ordered, with a cathartic powder in the morning.

4th, (Thursday.) Mr. DRYDEN had the kindness to send to me, saying, that this case looked suspicious, and requesting my attendance*: I found REEVES at first so ex-

* The reader will understand, that the cases have been generally drawn by Mr. DRYDEN; but to the outline, as furnished by him, I have collected and embodied REEVES's evidence with my own observations.

tremely irritable, that our common questions annoyed him; but he at last fully assented to the treatment proposed.

On being asked what those red lines and knobs were on his thigh and groin, he emphatically replied, that "*the anguish of his leg had caused them.*"

A dull and unequal redness, not unlike deeply-stained mahogany, now extended itself around the small part of his left leg, from the inner ankle to the calf. The redness was peculiarly mottled, not unlike Erythema papulatum, figured in Willan†, without vesications.

The absorbent vessels, emerging from the reddened patch, were traced, by their vivid colour, up the thigh, and their valves were easily discerned by their knotty appearance. The ulcer still looked fresh and healing.—Agonising pain prevailed, particularly on the inflamed parts of the limb, and increased by the slightest pressure. The skin was very tense and hot on the affected leg.

He had evidently suffered from considerable fever, as well as from local pain, during the night, and awoke with head-ache. Pulse 100, and full; bowels freely opened; tongue moist, but a little coated at its base.

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† See plate 31.

An incision was immediately made, by Mr. Dryden, through the inflamed skin and subjacent parts down to the Fascia, exceeding 5 inches in length, between the Tibia and Tendo Achillis, beginning a little above the inner ankle, and carrying it upwards in the direction of the limb. During the operation, Reeves suffered acutely, but more particularly from handling, than from cutting the diseased skin.

The divided edges gaped widely, and looked like sliced bacon or brawn. The Epidermis, rete mucosum, and Cutis vera, were thicker, denser, and redder than natural. The cellular substance was distended and considerably raised above the muscles by a yellowish, gelatinous, and semi-fluid substance, intermixed here and there with dots of pus, and whitish shreds of slough.

Three processes appeared to be going on at the same time, viz. the adhesive, the suppurative. and the sloughy.

Several vessels bled freely for a time, and ceased spontaneously. The blood was dark-coloured though arterial in part. Some lint, sopped in the rectified oil of turpentine, was inserted into the wound, which was well covered with a poultice of oatmeal, first boiled in water, and then worked into a proper consistence with yeast.

The operation was performed about noon, and *at four o'clock, P. M.* his leg had become easier. Pulse dropped to 90; bowels freely moved; head-ache gone. He was ordered fomentations to the wound on changing the poultices, which were renewed at every fourth or sixth hour. He then commenced the following mixture .—

℞ : Cinchonæ lancefol : contr : ℥ i ½.
Aquæ Cinnam : ℥ xvi.
Spt : Ammon : Aromatic : ʒ iv.
Fiat Mistur : cujus capt : Cyathum parvum omni 2dâ vel 3tâ horâ.

5th. His general appearance and feelings were much improved, although his night had been rendered somewhat restless by the smarting occasioned in his wound from the rectified oil. Pulse 85, and soft; skin moist; tongue a little coated; bowels open. The wound looked very sloughy, and the edges had receded widely from each other; but the cutaneous redness had become more pallid, although it had spread a little over the calf. The absorbents had lost their colour, but the inguinal glands remained enlarged, and tender to the touch.

Balsam of copaibæ was substituted for turpentine on this day; the fomentations and

poultices were continued. He took 10 grains of calomel, and, after two hours, some purging mixture, omitting the bark, which agreed very well with him, for a few hours of course, during the operation of the purgatives.

Eight o'clock, P. M. The purging mixture was repeated at four o'clock, when Mr. DRYDEN again saw him, as the former dose had not acted. Bowels now freely opened; pulse 80; skin moist.

Rep.r Mistur : Cinchonæ.

6th. He continued the bark, at the periods stated, during the night, when he was awake, and enjoyed some comfortable and refreshing sleep. Leg quite easy. The enlarged glands are subsiding, and the tenderness of the limb passing off; the ulcer discharges freely, both pus and sloughs; and the surrounding redness is vanishing.

Pergat in usu Mist : Cinchonæ.

He was allowed porter, and cold brandy and water, as beverages, and some animal food in the form of broiled chops.

7th. The discharge from the wound is free, the sloughs fast separating, and granulations beginning to sprout forth. He has not a bad symptom. The treatment continued.

8th. Granulations more apparent to-day; the injected cellular tissue is fast losing

its bloated appearance, and the redness quitting the skin. His appetite is keen, his countenance animated, and his skin moist. Pulse 80, and regular; in short his amendment is progressive.

Continueretur.

9th and 10th. Began to dislike the bark, of which he had taken a considerable quantity. He was ordered still to repeat a dose twice or thrice a day.

15th. The artificial ulcer now perfectly clean, and filled with healthy granulations, all the sloughs being cast off. The old ulcer has been healed for a day or two. His health and strength have returned with the improving aspect of the sore.

On this day the poultices &c. were left off, and some mild ointment, with a bandage, was substituted. He now omitted all medicines, and trusted to diet.

18th. Ulcer dressed with sticking plaister and bandages.

20th. Sore fast contracting.

25th. Nearly cicatrised. He walked out for the first time.

December 5th. REEVES called at my house in Plymouth, *perfectly recovered.*

REMARKS.

In REEVES it was remarkable that the injury, produced by so slight a graze, should not have been effectually and securely repaired in the course of twenty days. At all events we ought to notice that he was obliged to re-apply at the Surgery on Monday, the 1st of November, twenty-two days after the accident.

We naturally look, therefore, for some circumstances, either external or internal, to account for the non-healing of this trifling wound. And, if we suspect either a want of energy in the reparative powers of his system, or a propensity in the injured parts to inflame, we sanction an opinion that some peculiar Diathesis, or predisposition, existed in him at that time;—and that the erect position of his body for four hours at a time, when on watch*, the chilling effects of night

* Thirty or forty men go into the Dock-yard every night, before dark, and remain until the following morning. They are stationed at different parts of the yard in order to keep watch, to challenge, and cry the hour, like centinels on post. In the winter each man remains on watch for four hours at a time, so that REEVES had been eight hours on his legs during the night of the 31st of October. For this duty they, of course, receive extra pay. But it has been ascertained, that none of the other patients, here mentioned, had been watchmen previous to their illness.

air, the privation of rest, and other incentives to disease, had roused these morbid propensities into action.

We suppose, then, that the injury was the primary cause, and the nightly duties the secondary or efficient cause, concerned in the production of the common effect, which was local irritation exciting fever; or, in other words, if the *first* had not been, the *second* would not have proved efficient, and *vice versâ*:—That these two powers conjoined, were the antecedents to the constitutional changes, which were the consequents; and yet both these causes, viz. the local injury and nightly duties, might occur with impunity to another person, in whom a susceptibility of this disease was wanting, and were actually applied to him for several times before, with a dissimilar result.

Indeed REEVES had attended his watch on every third night, from the date of his accident, and felt no ill effects until this night. Might not the want of rest, and of the horizontal position, have retarded the perfect cicatrization of his wound?

In him, Nature seemed scarcely to know what she was doing. After the provocation, some lurking irritation hung about the integuments, and prevented firm cicatrization: some shreds of cellular membrane perished, and

disturbed the surrounding parts : some cells here and there formed pus, whilst vessels were effusing lymph between the layers of the skin, and consolidating or strengthening its texture, so as securely to confine the offending parts, which were again re-acting upon the primary sourses of the disease, and increasing both the tension and tenderness of this morbidly-sensitive integument.

Quere—are the co-existing formations of slough, matter, and lymph, compatible with the Hunterian doctrines? But such appeared to us. And I always trust to my own observation rather than to any authority, remembering the motto, "*Nullius addictus jurare in verba magistri.*"

It is also reasonable to infer, that this state of parts would have gone on from bad to worse, as it had done during four successive days previous to the operation; for disease once established, does not stop short in this way, unless it be counteracted by art, especially when every hour augments its energies, and renders the efforts of nature more feeble, and less effectual. This disease cannot cure itself—it must be opposed by art.

On the 4th day after the accession of fever, I saw REEVES. The advancement had been progressive from bad to worse during that period. His body had been well prepared by

purgatives for the plan of treatment, which was then instituted. I cannot fail to notice the irritability, which, at that time, prevailed with him, as I have learnt that the nervous system was similarly disturbed in some of the other patients. The treatment then resorted to, it must be admitted, was most decisive, and calculated to do either much good or much harm.

A long and deep incision, followed by a free use of bark, ammonia, and other stimuli, ought to effect some obvious and salutary changes either in a healthy or diseased man. Had this treatment been favourable to the march of the disease, its route must have been accelerated to a fatal termination. But, no!—What did it? Why, it put an immediate check to every morbid feeling. There was no material advancement afterwards.

The agonising pain in the leg began henceforth to cease, the erysipelatous redness to disappear from the absorbents, and the glandular enlargements to subside. The pulse lessened its frequency, the fever diminished, the irritability was soon converted into tranquillity and gratefulness, the appetite returned and comfortable sleep was restored.

The turpentine quickened the actions of the parts, and expedited the suppurative process in washing off the sloughs; but it ought to

have been only once applied. The Balsam of Copaibæ and poultices also contributed to the same views.

I do not mean to hazard an opinion, what the result of the same treatment might have been in the other patients; for I, not having seen them, do not consider myself authorised to decide on that question. But I may be allowed, I trust, to observe generally, that whenever this dense and brawny skin exists, and conceals morbific substances underneath, which are highly offensive to the surrounding parts, and even to the whole system, it stands with reason and experience that a free incision, made through it, must not only remove the tension, but also give exit to injurious materials.

I consider this practice to be unexceptionable, and essential to the successful treatment of this species of inflammation. The Profession, in my opinion, is much indebted to Mr. Copland Hutchinson, for his excellent paper contained in vol. v. of the *Medico-Chirurgical Transactions of London, on the Treatment of Erysipelas Phlegmonoides by Incision**.

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* Much as I approve of the practical tendency of Mr. Hutchinson's remarks, nevertheless I had not profited by them as I might have done, when I first saw Reeves, not having been prepared for what I then met with. I have since

We cannot exactly estimate the quantity of good done by the bark; but we must allow something for it, I think, as it certainly did no harm. It brought about a good appetite, and, I think that the skin was kept moist by its use. At all events, a kindly suppuration was quickly established, the sloughs cast off, and healthy granulations formed.

Such a favourable result would not have followed, I consider, an opposite mode of treatment, if bleeding and continued purging be deemed the reverse to a course of bark.

Now in the healing of ulcers, which are either irritable, sluggish, or foul, we find that bark taken inwardly will greatly improve their aspect.

It is worthy of remark, that the pulse diminished in frequency, and the febrile symptoms subsided under a free use of bark.

I consider that it made a vast difference to this man, whether or not his blood was spared; and also what medicines he took;

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recollected this paper, and also a synonimous practice adopted by shepherds, for a disease called the *"Udder ill,"* which occurs in sheep. During the lambing season, erysipelas will sometimes attack the ewe's udder, quickly run up the flank, and terminate in gangrene, if it be not observed. The well-known practice is to make deep incisions into the mamma, and apply oil of turpentine—a practice which almost always saves the life of the animal.

for the bark seemed to me to remove irritability and to raise the constitution gradually up to a par with the local inflammation. In short it did him much good.

I cannot conclude my remarks on this case with greater satisfaction to myself, than by adducing the following quotation from Mr. Hunter, who seldom drew any inferences hastily, and who never reported good or ill of any practice, unless he had verified his remarks by numerous facts and repeated experience:—

He says, "in irritable habits, where the inflammation becomes more diffused, greater caution is necessary, with regard to purging, as well as bleeding; for I observed, on the subject of bleeding, that in such constitutions, no more blood should be taken than would relieve the constitution, as it were, mechanically, but not such a quantity as to have a tendency towards lowering or weakening that constitution; for in such cases the action is greater than the strength; and whenever the disposition between these two is of this kind, we cannot expect any thing salutary from this mode of treatment, and therefore should not increase it. In such cases, the very reverse of the former method should often be practised; whatever has a tendency to raise the constitution

above irritability, should be given; such as bark, &c. The object of this last practice consists in bringing the strength of the constitution, and part, as near upon a par with the action as possible, by which means a kindly resolution, or suppuration, may take take place, according as the parts inflamed are capable of acting."*

In addition to the above *eleven* cases, which have been fully detailed, *four* others occurred under the care of private Practioners; but these were not attended by the Medical Officers of the Dock-yard regularly, as the patients, prior to death, were supposed to be labouring under common inflammatory fever, unconnected with any local injury. Otherwise, if hurts had been assigned, the Surgeons of the Dock-yard must have officially attended to them.

Under circumstances of local injury, received in the Dock-yard, and of fever arising from such injury, the Medical Officers of that establishment invariably attend such patients, who would not employ private Practitioners, I conclude, if they could gain medical assistance for nothing. All four, whilst en-

* Hunter on the Blood, p. 347.

gaged in the performance of their usual duties, received local injuries, which, there is now not the slightest doubt, produced their fever and death.

They all were blooded from the arm, and subjected to the usual antiphlogistic treatment*.

Gangrene appeared in each person, either prior to, or immediately after, death. The bodies underwent rapid decomposition, and excessively offensive gases were disengaged.

I shall briefly recite these four cases without comment.

Case 12.

William Taylor, æt. 42, a very tall and healthy man, whilst sawing Oak timber, as the top man in a saw-pit, slightly wounded his right great toe with a large saw, on Monday, the 2d of August, 1824. He continued at his work daily, with the dressings which were applied at the Dock-yard Surgery, until the following Saturday, on which day he remained at home, (no work being done on that day) as well as on Sunday.

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* As I might have occasion to repeat this term, I think it proper to explain that I mean, by antiphlogistic treatment, repeated doses of Calomel, Antimonial powder, Saline draughts, liquid purgatives, &c.

Towards Sunday evening his toe became so very painful, that he expressed fears to his wife lest he should be prevented from following his work on the next day.

However, on Monday, the 9th of August, he went into the Dock-yard at the accustomed hour, and his breakfast was sent to him, but his stomach loathed it, and refused food.

TAYLOR again shewed his toe and foot, which were now swollen and inflamed, to the late Dr. BELL, who immediately ordered him to go home, and in the evening visited him in Granby-street.

On Tuesday, the 10th, Dr. BELL revisited TAYLOR, and, finding him labouring under a smart attack of fever, desired that a private Practitioner might be consulted. Accordingly Mr. SQUIRE, Surgeon, in Devonport, sent him some medicines, as the Doctor had not at first suspected the existing connection between the fever and the injured toe.

Mr. SQUIRE continued his attendance, but Dr. BELL did not see TAYLOR afterwards.

On Wednesday, the 11th, TAYLOR was blooded from the arm, and subjected to the usual antiphlogistic treatment.

On Thursday he became worse, and his right arm useless.

On Friday, mortification had taken place on the toe, the whole leg was very much

tumefied, and the absorbent vessels had been highly inflamed even to the groin.

He died at *eleven o'clock* on Saturday forenoon, the 14th of August, after drinking some tea, almost suddenly, not leading his wife to suppose his danger.

Case 13.

John Quick, æt. 35, suffered from a compound fracture of his right great toe, by an iron hook, which fell upon it on the 18th of August, 1824.

He was attended by the Medical Officers of the Dock-yard, until the 9th of September, when he resumed his duties as a blacksmith, apparently quite well.

On the 22d or 23d of September, fever arose—one red patch appeared on the outside of his right calf, another on his right thigh, and a third on his left arm.

His excretions became exceedingly vitiated, and delirium and stupor intervened. He also was blooded from the arm, and subjected to the usual antiphlogistic treatment; but he died on the 29th of September, at *midnight*, about the 6th or 7th day after the commencement of fever.

Extensive gangrene appeared on the right leg and foot, accompanied with an uncom-

monly offensive effluvia. Matter was afterwards found in the cellular membrane, which surrounded the extensor pollicis proprius tendon of the injured toe.

Case 14.

John Long, æt. 37, slightly bruised his right thumb, and abraded the shin of his left leg, whilst piling timber in the Dock-yard, on the 27th of August, 1824.

His injuries were dressed daily at the Surgery, and considered too trifling to exempt him from his duty, so that he lost no work on their account.

Fever arose about the 11th day after these accidents, (on the 8th of September,) and death followed in two days, i. e. on the 10th of September.

He was attended by private Practitioners, as the fever was not supposed at the time to depend on, or be connected with, any local injury whatever.

Mr. Dryden, however, saw Long once during these two days, *ex-officio*, and learnt from the medical advisers, that the patient was labouring under idiopathic congestive fever.

After death it was ascertained that the fever in Long arose entirely from the injuries received on his hand and leg, in the execution of his duty.

Case 15.

A temperate and healthy man called Thomas Beer, living at No. 2, South-Hill Buildings, a shipwright, under 40 years of age, was attacked with fever, and acute pain in the right arm-pit and side, on Sunday, the 19th of September, 1824.

He immediately lost thirty ounces of blood from the arm, and on the 20th sixteen, making in all forty-six ounces.

On the 21st he appeared to be relieved, by the blood which he had lost from his arm, on the preceding days; but on the 22d the pain returned in his axilla and side, with a blush of redness. He passed a most vigilant and restless night on the 23d, and at *six o'clock* on Friday morning, the 24th, he died.

Mortification had appeared on his side before death. Afterwards it was ascertained that his right hand, over the palmaris brevis muscle, had been wounded by a bit of glass, when working on board His Majesty's ship Gannet, in Hamoaze, on Tuesday, the 14th, five days preceding his attack on the Sunday; that it had healed and not troubled him; but from the want of connection between the blush on his side and the injured hand, no suspicion arose as to the really-exciting cause of his fever.

Synoptical View of the alarming Cases which occurred in his Majesty's Dock-yard at Devonport, during the Year 1824.

No.	Names.	Age.	Local Injury.	When received.	Commencement of Fever.	Its Duration.	Result.	When died or returned to Duty.
1	WILLIAM COWLE...	45	Puncture from a nail in his left foot...	Between 25th & 31st July	1st August	About 15 days..	Death ..	15th August.
2	JOHN HENWOOD...	45	Laceration of his hand by a saw.....	4th August.....	6th August	67 or 68 days ..	Do.....	11th October.
3	JOHN BATE.....	45	Left fore finger jammed off by wood...	16th August.....	20th August.....	5 days	Do.....	25th August.
4	WILLIAM BUTTERS..	40	Nail torn off his right ring finger.....	10th August.....	18th August.....	About 4 weeks	Recovery	11th October.
5	ROBERT HORNE....	32	Left great toe bruised	30th August.....	1st September	15 days.	Death ..	14th September.
6	GREGORY NICHOLS	45	Abrasions on his right shin bone.....	7th, 8th, or 9th September	13th September	6 days	Do.....	19th September.
7	WILLIAM LOBB.....	40	Chin contused by a nail.....	13th September	18th September	Nearly 2 months	Recovery	29th November.
8	JOHN RAWLING	40	Three fingers of his right hand jammed	17th September.....	19th September	6 days.....	Death ..	25th September.
9	Dr. BELL.....	58	Scratch on his right fore finger	19th September.....	20th September	5 days	Do.....	24th September.
10	JOHN WALKIE.....	38	Abrasion on his inner ankle.....	13th September	1st October	5 days	Do.....	5th October.
11	WILLIAM REEVES ..	44	Abrasion of his left shin bone	9th October.....	3d November	About 12 days..	Recovery	27th December.
12	WILLIAM TAYLOR..	42	Laceration of his right great toe by a saw	2d August.,.....	9th August	5 days	Death ..	14th August.
13	JOHN QUICK.....	37	Fracture of his right great toe.....	18th August.....	22d or 23d September....	6 days..... ..	Do.....	29th September.
14	JOHN LONG	37	Contused finger and abraded leg.....	27th August.....	8th September.....	2 days	Do.....	10th September.
15	THOMAS BEER.....	40	Hand wounded by glass.....	14th September	19th September	5 days	Do.....	24th September.

☞ *The Names are arranged according to their order in the preceding pages.*

I am indebted to Mr. Blewett, a very intelligent Pupil of Mr. Dryden, for this Table.

Besides the cases now detailed, it appears that above 250 men* *were laid up from their duty*, by reason of various hurts received between the 24th of June, and the 31st of December, 1824; several of whom had inflammatory attacks not possessing sufficient interest to occupy general attention; but only *fifteen* patients were affected with this disease in its malignant form, of whom *twelve* died.

The number of wounds was not greater than usual during that period, but the fatal results from such apparently trifling causes were unprecedented.

In the course of each year, it is calculated that, on an average, between *three and four thousand men* wound or hurt themselves, in the Plymouth naval yard, in such a manner as to apply for surgical assistance, but of that number only about *four hundred* may be incapacitated from attending their duty, viz. one in nine or ten instances.

Mr. Dryden has filled for ten years the situation of Assistant Surgeon in this yard, and known only *two* instances of men dying from fever supervening on local injuries.—One of these men had received a wound from an adze above the inner ankle of his left leg,

* The reader will understand that the trifling wounds are not included in this number.

and died in seventeen days afterwards. The second had a severe contusion and abrasion on his right foot, and died in five days. It is to be regretted that these cases cannot be fully detailed, as only some short notes of them are preserved.

MECHANICS.

There are at present about *two thousand* Mechanics in this Dock-yard, liable to such accidents; but some of them may wound themselves a dozen times in the course of the year.

Certain trades very much expose men to accidents; for instance, those of shipwrights, caulkers, blockmakers, sailmakers, smiths, joiners, carpenters, ropemakers, riggers, sawyers, labourers, (who are frequently employed in stowing timber,) painters, glaziers, &c.*

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* The reader may find some ingenious and useful observations upon the diseases of professions, in the *Quarterly Journal of Foreign Medicine and Surgery*, by my friend, Dr. GOSSE, of Geneva—No. 7. Art. 5. p. 267. I am one of those persons who regret the discontinuance of this valuable work.

Also in *Ramazzini de morbis Artificum.*—Caput 14. Veneziæ, 1743.

Beddoes's Essay on Consumption, for the use of Parents and Preceptors, 8vo.—Bristol, 1799.

Desgenettes Histoire, Medicale de l'Armée de l'Orient—Part 2. p. 36. 8vo. Paris, 1802.

The life of the labouring mechanics, in the Dock-yard, consists in their daily work from six o'clock, A. M. to six, P. M. in summer; and from day-light until dark, in winter.

They take their meals at eight, twelve, and seven o'clock, and live temperately.

When ill of fever, or general disorder, they receive no pay, and when injured by wounds, contracted in their work, half-pay; so that there is no inducement to report themselves sick; but, on the contrary, a loss is certain, unless they belong to a club. Perhaps the loss of wages through illness might have induced some of them to continue longer at their work than they ought to have prudently done, instead of laying themselves up at once.

MR. DRYDEN.

It is worthy of remark, that Mr. Dryden, who opened several of the bodies after death, often suffered from irritation of the skin over his hands, so much that blackheads formed both on his arms and hands.

In the course of one night blisters would arise, after opening a body, and contain a bloody or grumous sanies, which, being discharged, would be followed by a thickening and a livid colouring of the surrounding skin.

He at last suffered severely from a car-

buncle, which began, like the other black-heads, over the broad or carpal end of his left radius.

On the 24th November I first saw it, and advised its being immediately opened. This was not done.

On the 25th it had spread, and become exceedingly painful.

On the 27th, it had considerably elevated, and extended itself in circumference, with the most exquisite sensibility, and attained the size of a small tea cup. He had been feverish and vigilant during the night: his absorbents were inflamed up the arm even to the axilla. I still requested him to have an opening made through the indurated skin; but the sensibility was so excessive, that he could not be prevailed upon to submit. He suffered most acutely until the skin gave way, and a core presented itself, which sloughed out gradually, leaving a chasm that was quickly regenerated by healthy granulations.

The result, which nature here accomplished by a tedious and highly-painful process, might have been effected in an instant by the lancet, and much suffering saved; but the natural feeling of the skin is so exquisitely quickened in this sort of disease, that an absolute dread prevails in the mind to have the part touched.

The attack left him in a most debilitated

state, with his spirits much sunk; but he is at present in better health.

Erysipelatous inflammation is a very frequent sequel of local injuries received in most Dock-yards; but fever, gangrene, and death, are rare occurrences, as may be seen from the following letter, which I have had much satisfaction in receiving from Dr. COWAN, of the Portsmouth Dock-yard, in answer to one addressed to him by myself.

"*Portsmouth Dock-yard,*
9th March, 1825.

"Sir,

"I am much pleased to hear, from your communication of the 6th instant, that we are at length to be favoured with some authentic information respecting the disease which has recently committed such ravages amongst the Artificers of Plymouth Dock-yard.

"In answer to your question, whether a similar affection has ever prevailed in this establishment, I beg leave to assure you, that although erysipelatious inflammation, accompanied with much constitutional derangement, has occasionally and unexpectedly supervened on the most trifling injuries,

not a single death has occurred in consequence during these twelve years.

"This, I apprehend, is the full extent of the information you at present require, and which is quite at your service.

"I am, Sir,

"Your obedient and humble servant,

"D. COWAN.

"To Dr. BUTTER."

IDENTITY.

The identity of these several cases, and particularly of REEVES, with each other, may be questioned; and very right it is to carry a doubt in the mind on this important subject:

"Rerum certa fides et regula firma sciendi
Scrutando nobis et dubitando venit."

But the analogy of the injuries received, and of the consecutive fever, which appeared in COWLE, NICHOLS, HORNE, LOBB, RAWLING, and REEVES, is admitted by Mr. DRYDEN, who saw nearly all the patients.

A question may arise, whether or not all these men were affected with one and the same disease; or whether we ought to speak of a diversity of diseases.

In one man there were a few symptoms more, and in a second a few symptoms less, than in others; in some patients there was seen inflammation of the absorbent vessels

and glands, which was wanting in other patients, in whom a patch of redness appeared here and there; but surely these are not reasons for multiplying the names of any disease, nor for supposing its character to be different in any one instance.

The most alarming and fatal disease---the plague---is not always uniform in its operations.

When the Plague appeared at Noya,* in the province of Bari, during the winter of 1815 and 1816, preceding the year of my visit to Naples, it was not at first recognised by the Physicians sent by the Governor, as some of its leading features differed from the Plague seen at Malta and in Egypt; but the general character sufficed to constitute a perfect identity, according to Schönberg.†

It appeared under four distinct forms:

1. As a burning nervous fever.

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* Giornale di tutti atti, discussioni e determinazione della sopra intendenza generale e Supremo Magistrato di Sanitá del Regno di Napoli in occasione del morbo contagioso sviluppato nella Citta di Noya. Napoli, nella Stamperia Reale, 1816.

† Ueber di pest zu Noya, in den Jahren, 1815 und 1816. Aus officiellen Berichten und aus Beobachtungen von Augenzeugen, von J. J. A. Schönberg, M. D. erster und dirgender Arzt des Hospitals S. Sagramento in Neapel, &c. Nürnberg, 1818. This work has been published in Germany, by Dr. Harless, with a very elaborate preface.

2. As a continued fever, running a rapid course.

3. As fever with gangrenous spots and boils.

4. As fever with bubo or carbuncle.

Out of 5,413 persons, constituting the population of Noya, 921 were attacked with the Plague, of whom 728 died, and 193 recovered.

The Dock-yard Disease also appeared under *five* distinct modifications :

1. Fever with inflammation of the absorbent system.

2. Fever with cellular inflammation and suppuration.

3. Fever with erysipelas and vesications, or gangrene.

4. Fever with erythematous patches.

5. Fever with intense local pain, void of redness.

I do not mean to say that there is any analogy between the Plague and the Dock-yard Disease, because the one is most highly contagious and infectious, whereas the other is neither contagious nor infectious, but only to shew that no disease is perfectly uniform.

Two patients, labouring under the same disease, are not affected precisely alike; nor does any disorder run an equally uniform course in all persons. There will be a modification in the time, mode of action, course, intensity and duration, with which every dis-

ease proceeds; and these differences must be attributed to peculiarities of habit, regulated by circumstances. Two children may be inoculated with the same matter, the one shall be infected, and the other escape. With measles, scarlatina, and other contagious diseases, we detect similar differences whenever they prevail in families, whose constitutions and modes of living may be supposed to correspond. Dr. Willan, therefore, made three varieties of this disease:—1. Rubeola Vulgaris; 2. Rubeola sine Catarrho; 3. Rubeolo Nigra.

The measles may appear amongst a family of children, and only destroy one, affecting the others between the extremes of mildness and severity.

During the last summer, the measles proved most unusually fatal at Exeter; but no one questioned the identity of the disease.

With scarlet fever, which very seldom proves fatal, but for the officiousness of the Doctor, "*Nimiâ medici diligentiâ*,"* we find as many varieties:—1. A mild and perhaps an unsuspected disease; 2. Fever, with an affection of the throat; 3. Fever, followed by diarrhæa, hæmorrhage, petechial spots, and death.

* Sydenham, vi. 2.

We do not, therefore, consider these distinctions as constituting three diseases, but one disease.

There are also six different varieties of Erythema, and four of Erysipelas, according to Willan and Bateman. In the latter disease, if matter form in the cellular membrane, the name given is 1. Erysipelas Phlegmonodes; if swellings and vesications appear, 2. Erysipelas Œdematodes; if parts perish, 3. Erysipelas Gangrænosum; and if it wanders from place to place, 4. Erysipelas Erraticum. But these several distinctions do not include the infantile Erysipelas, or that which occurs especially in children, of which Dr. Underwood* has published a faithful account, and I therefore add, 5. Erysipelas Infantile, which may partake of the other varieties. Dr. Douglas† considers that puerperal fever may exist, 1. as synochal; 2. as gastrobilious; 3. as epidemical, or contagious puerperal fever.

We have already shewn that Professor Dease and Mr. Egan were infected nearly at the same time with a kindred disease, from dissecting the same object, yet that wide differences resulted—just as with that which we have denominated the "*Dock-yard Disease.*" A general similitude, like members of one family, is cognizable in each particular

* See his work on the Diseases of Children, vol. i.—31.

† Dublin Hospital Reports, vol. iii. p. 152.

instance, though the periods of attack, the exciting causes, the duration, severity, and effects of the disease are varied.

Fifteen men, in working health, receive slight wounds, either punctured, lacerated, contused, or abraded, too trifling to exempt them all from their duty. The majority pursue their employments, and in the course of time, the wounds create fever and irritation, of which death was a common result.

If this be not identity—perfect sameness—why did fever appear after the receipt of the mischief? How was it restrained prior to the local injury? Why should the disease generally arboresce around the provoked parts, and ramify through the cellular tissue, disturbing the nervous system, and carrying destruction in its growth?

They made no complaint before the infliction of the wounds; they all suffered fever, which could be either directly or subsequently referred to their injuries; and those who died, with the exception of HENWOOD, did not survive the 15th day. Their febrile symptoms were sufficient to characterise the disease generally as one and the same genus, and it would be the height of scepticism any longer to doubt its identity. The fact is, there existed in each man a propensity to excitement, which was roused into action by any kind of external irritant, no matter what.

I believe now that I have concluded the whole of the evidence which has come into my possession on this subject, and taken every possible pains to ascertain that the cases are correct. Having recapitulated some of the material facts, with such inferences as the premises appeared to warrant, and having also proved, as I conceive, the identity of the cases, I shall next proceed to a consideration of the causes, and ultimately conclude with some general remarks on the nature and treatment of this formidable disease.

TEAK-WOOD.

A variety of causes have been alleged for producing this disease; but no person has defined precisely the meaning attached to them. Suspicions have fallen indiscriminately on the Teak-wood, the Mineral Tar, the Dressings, the Air, Pering's Roofs, &c. and do still rest, in an unfounded degree, on the individual or combined agencies of these supposed powers. I shall proceed, therefore, to examine each accused cause seriatim, and ultimately endeavour to resolve this part of the enquiry into its elementary and proper basis.

I disclaim all idea of poisonous wood.—In consequence of the reports, which ap-

peared in the newspapers, respecting the noxious qualities of the Teak-wood used in the Dock-yard, and supposed to produce this disease, I made particular enquiries concerning it. There does not exist the remotest probability that this wood had any share in producing this disease, since the men who died were not brought into contact with it, and, moreover, had not been in anywise exposed to its agency. In no one instance has it proved a cause of disease.

As a species of wood rendered particularly fit for ship-building by its hardness and durability, the Teak-wood possesses qualities perfectly inert, since the negroes, employed in Africa and in the East Indies, do frequently cut their hands with impunity. I understand, however, that the fresh sap may sometimes excite irritation, and that the blacks suck it out. And, besides, our sawyers employed in the Dock-yards at Chatham, Portsmouth, and Pembroke, must be equally exposed to the action of this wood with those employed at Devonport, and yet such results have not occurred at these places; nor should it seem that the artificers have died here in such a manner during any preceding season.

When two men saw Teak-wood in a pit, the under man must be exposed to the saw-dust, which is very fine, for many successive

hours, perhaps swallow or inhale it, or cut his hand with the saw, and yet no bad results have ever been witnessed. Its taste is bitter, and its smell fragrant.

But granting that the Teak-wood be as poisonous as the deadly Upas, how could it have been brought to act? A man is piling timber, over which he falls, or the timber falls on his legs, and grazes his shin—how could any poison be applied through a thick trowser and stocking? But, unfortunately for the suspicion, the men who died after such bruises had not been employed about Teak-wood, as they received their injuries from Fir, Cedar, English Oak, Mahogany, and other woods. And out of the many men, who bruised their legs, a few only were attacked with constitutional disease.

I am indebted for this information respecting the three sorts of Teak-wood, or foreign Oak, to Mr. Couch, Timber-Master in our Dock-yard, who has kindly favoured me with specimens from his private collection, which contains above 800 distinct species of wood, brought from different parts of the globe.

MINERAL TAR.

Defeated in their attempts to ascribe the cause of this disease to the Teak-wood, some people fixed, with no less hesitation, on that

particular mixture, called Mineral Tar, with which sheds and the timbers of vessels are painted over. There are two sorts of substances employed in the Dock-yard under the denomination of Tar; the one a vegetable production, is obtained from Fir, *(Pinus Sylvestris)* and the other a mineral distillation from Coal. The former is considered salutary and remedial, having been recommended for consumptive patients, in the form of vapour, and as a drink *(Tar-water)* in cases of Erysipelas and other cutaneous affections.

This last bituminous substance, which is a compound of Asphaltum and Petroleum, probably from its very offensive smell, has been accused of injuring the health of the labourers, and of proving an indirect cause of this disease. But it is again unfortunate for such surmises, that the victims of death had seldom worked immediately within the range of its odour.

Moreover, the men whom we saw superintending the process of preparing Mineral Tar, had every appearance of health, and never knew any pernicious effects to arise from it. They considered the vapour as a panacea for some pulmonary complaints, particularly the Asthma, and recommended us to try it. The inhalation excited coughing, and a constrictatory sensation in the glettis and bronchial

tubes. So that neither sort of Tar merited the popular censure which had been cast on them.

DRESSINGS.

Insinuations have been also cast on the Dressings, and particularly on the Sticking-plaister used in the Dock-yard.

I hope to shew that these are equally false with the other suppositions. The same sort of plaister, which was applied to the men who died, has been also employed for hundreds of other patients, who had hurted themselves, and who had perfectly recovered.

This simple fact is a convincing proof that no poisonous ingredient could have existed in the dressings; and if further proof be required, it may be stated that the same disease appeared in two or three men—for instance, Cowle and Horne, for whom it had not been used, as in those who were dressed with it. The Sticking-plaister is the Emplastum Plumbi, *(Ph: Lond:)* to which a small portion of resin is added in summer, and some lard in winter, in order to give it a proper consistence.

AIR.

The public mind, still in search of causes, was next led to a consideration of the air, which at once was thought to be capable of producing the disease under consideration.

Atmospheric air especially influences the health of man, animals, and plants, in a manner and to an extent beyond our powers of detection. We have not the means of analysing and determining the constituent elements of the atmosphere so precisely as to say how health is impaired, or when disease is engendered. We can discover its heat and density; decompose and prescribe the component parts of oxygen and nitrogen; say when it rains, freezes, and blows; measure the vapour, &c.; but yet the many vicissitudes of heat and moisture, influencing animal health, may totally escape our vigilance.

We can only account for meat and game putrefying so rapidly in the summer months, or in hot countries, by supposing that a combination of heat, moisture, and electricity, favours the putrefactive process.—Therefore a wide range is open to the speculators on atmospheric changes, for supposing this or that disease to be produced by them; but why the air should have disposed the constitutions of some few men to this disease, and not of all the men equally, working in the same yard, and living in a similar manner; or of the same person in this rather than in a former season, we are again totally unable to explain.

We can often determine by our feelings certain conditions of the atmosphere, which are not indicated by meteorological instruments. A sinking at the præcordia is not an infrequent sensation in sultry weather; and a pressure on the brain is sometimes a sign of gloomy weather. Rheumatic patients, who have not been inaptly styled "*living barometers*," can also foretell the changes of the winds, and even rain, by their articular pains. The east wind also dries the skin, and produces a relapse of many complaints—as, for instance, of the Ague and Asthma.

The air of Plymouth is mild, salubrious, and beneficial to invalids. According to the Meteorological Journal, kept at Stonehouse by Captain ROTHERAM, R. N., to whom I feel much obliged for the subjoined abstract, and which is published weekly in the *Devonport Telegraph*, it does not appear that the hot weather of the year 1824 differed materially from that of former years. The thermometer was at its highest on the 2d of September, then at 77°. The barometer often stands high, or at set fair, when it rains for a whole day at Plymouth.

There are two ways in which atmospheric air might have acted:—1st. locally; 2d. generally.

1822.				
Month.	Barom.	Therm.	Rain.	
			Depth.	No. of Days.
July	29.84	67.10	3 560	19
August	30.00	68.16	1.280	9
Septr.	29.98	62 30	0.390	6
Octr.	29.86	57.10	5.771	24
				58

1823.				
Month.	Barom.	Therm.	Rain.	
			Depth.	No. of Days.
July	29.97	63.40	3.566	22
August	29 94	63.45	3.265	22
Septr.	30.07	62.50	2.972	10
Octr.	29.71	57.10	4.165	16
				70

1824.				
Month.	Barom.	Therm.	Rain.	
			Depth.	No. of Days.
July	30.16	67.84	2.484	7
August	29 00	67.65	1.955	14
Septr.	30.22	64.67	2 097	12
Octr.	29.76	57.00	4.367	24
				57

A vulgar notion prevails that air, particularly in the night season, has a tendency to inflame wounds, when their surfaces are exposed to it; but I cannot exactly say what faith we ought to place in this notion.

It is much more reasonable to infer that, if the air had affected the men, its operation was internal through the medium of the lungs.

We inspire atmospheric air for the purposes of changing and revivifying our blood. The dark coloured blood is brought by the veins from different parts of the body to the right side of the heart, where it is mixed with the chyle, and passed through the lungs, in which its colour is changed from a dark purple to a bright crimson red, owing to the access of atmospheric air. The blood is changed, and the air is changed.

The air, which goes into the lungs as oxygen and azote, returns as azote, robbed of a great portion of its oxygen, which is partly united with the carbon in the lungs, forming the carbonic acid gas expired, and partly absorbed by the blood.

At all events respiration is performed either for the purpose of decarbonising or oxygenating the blood; and for this purpose it has been calculated that between 30 and 40 cubic inches are taken into the lungs at each inspi-

ration, when the circulation is natural, out of the 36,000 lbs. weight of atmospheric air pressing on every person, whose surface of body amounts to 15 or 16 square feet.

Therefore an impure condition of the air might primarily affect the blood, and ultimately the whole body, through which it is circulated for growth, nutrition, secretion, and reparation, rendering the complexion pale and squalid, engendering a susceptibility to irritation, and fostering every latent propensity to acquire disease.

"The blood, the fountain whence the spirits flow,
The gen'rous stream that waters ev'ry part,
And motion, vigour, and warm life, conveys
To ev'ry particle that moves or lives,
This vital fluid, thro' unnumber'd tubes
Pour'd by the heart, and to the heart again
Refunded, scourg'd for ever round and round,
Enrag'd with heat and toil, at last forgets
Its balmy nature."

But by air, I conclude, was also meant some miasma or contagious exhalation, arising from decayed vegetable and animal substances in the Dock-yard; and this idea was fostered by the consideration that several men employed about the Mast-pond, had been attacked with the disease, which was said not to have arisen without the precincts of the yard, as the inhabitants of Devonport had not

been attacked by it. But on enquiry, I believe it will be found, that Erysipelas did prevail in the neighbourhood, in the course of the last year, and prove fatal in several instances.

Contagion implies the contact of a living body with the subtile particles of disease, propagated from one person to another, by pulmonary inhalation.—Thus the effluvia arising from certain fevers, as Typus, &c. or from putrid substances, may prove contagious.—Intermittent and remittent fevers are ascribed to the miasm of bogs and fens. Thus we are said to catch a fever, and to infect a person with the cow-pox, itch, &c.—Now I have already stated that this disease was neither contagious nor infectious, and therefore we could not expect to find its sources altogether in the atmosphere of this establishment.

Every one who has attentively surveyed this Dock-yard can bear testimony to the neatness, cleanliness, order, and regularity, in which its various departments are kept; reflecting the highest credit on all the officers, from the Commissioner downwards, and preventing the possibility of contagion arising in an establishment so well conducted, and so completely ventilated.

PERING'S ROOFS.

Another vague report was also circulated, that the disease had been occasioned by the roofs, which were introduced into the Dock-yard at Devonport, during the year 1814, by the late ingenious Clerk of the Checque, RICHARD PERING, Esq., to whom this country is also indebted for great improvements in the construction of an anchor.*

These awnings serve equally for the protection of ships whilst building, and for the artificers employed, inasmuch as both are excluded from the fervour of the sun, from rain, and from other vicissitudes of the seasons. They tend at once to the preservation of the materials, the dispatch of business, and the convenience and health of the artificers.

All that can be said against the roofs, I believe is, that currents of air may pass under them at times with great velocity, and expose the men to cold; but there have been no instances of disease furnished, I understand, during the eleven years they have been erected in this yard, and tried for a much longer period at Carlscrona, in Sweden, before they were introduced into the Dock-yards of England. Besides, we cannot learn that the men, herein mentioned, had been working under them.

* See his Treatise on this subject.

Having now adverted to some of the supposititious circumstances erroneously assigned in the causation of this disease, and pointed out their inefficiency, I shall in the next place proceed to a consideration of other powers, which may be deemed more probable, and consonant to the notions entertained by medical men, on the subject of cause and effect, with reference to diseases in general.

In the first place we are expected to explain the reasons why such an unusual fatality should have followed simple wounds, between the first of August and the first of November, 1824, and why the same disease was not recognised in the town of Devonport during that period.

This question resolves itself into the two following considerations.

1st. Either that some morbific and unsuspected substance was applied to the bodies of the deceased men, the effects of which substance have not been marked at any former or subsequent period, in such an accumulated degree:

2d. Or that their constitutions must have been unusually susceptible of irritation at this particular crisis.

POISON.

As to the former of these considerations, we can negatively shew that the weapons, with which the injuries were inflicted, were not armed with any morbific matter, to which the diseased actions could be referred in any one instance.

We cannot positively deny that any such substance could have been lodged on the nail in the case of COWLE, nor on the saw in the case of HENWOOD, nor on the needle in Dr. BELL, nor on the glass in BEER; but we have strong reasons for presuming, that no such matter actually existed on these materials; inasmuch as we can confidently aver, that no poison whatever could have been applied either to HORNE through his shoe, or to NICHOLS, WALKIE, and REEVES, through their trowsers and stockings, unless it had pre-existed on these articles.

Now if we admit the doctrine of poison in any one of these instances, we must admit it in all; and if we reject it in some, it is fair that we should also reject it in the others. I will therefore state my belief, that the supposition of poison does rest on such shallow and untenable grounds, as to warrant us altogether in relinquishing it. We cannot imagine that poison was deposited like dew,

equally on leather, wood, iron, and glass; on nails, saws, hammers, and needles; that it had diffused itself not only throughout the yard, but even in ships; for admitting the ubiquity of this self-concealed venom—why did it not operate on some of the 250 men who were laid up from their duty by wounds received at the time this disease appeared?*

In my opinion, we might as well have looked for the Philosopher's Stone as for any poison existing in the Dock-yard, and capable of producing the disease in question; or equally for the seeds of the gout in the great toe, from a supposition that they had been emplanted there, or inoculated through the skin. The idea is so much at variance with our daily observations; the symptoms were so dissimilar to those witnessed in cases of poison, and so closely allied to disease, that we must discard the notion of searching for any infectious matter, until more solid and convincing evidence can be elicited; and, for the present, abandon this part of our enquiry.

A poison is a substance, more or less obvious to the senses, capable of producing disease and sometimes death. There may be poisonous substances in nature, yet undiscovered, so subtile as to escape our most

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* See page 121.

rigorous investigation; for what substance may not occasionally act as a cause of inflammation, from the manner in which it is applied to the body?* But still we cannot carry our credulity so far as to imagine that any hidden substance could have produced this disease, although we know that the poison of the viper and of other animals, which may be perfectly innocent when swallowed, will act deleteriously on being inserted under the skin. In consequence of the uncertainty which appeared to me to prevail in the public mind between the mere mechanical irritation of parts, and the application of some specific virus, I have endeavoured to subdivide the class of external irritants into three orders, not being aware that such an arrangement has been as yet offered, and thinking that a condensed view of the causes, commonly exciting inflammation in constitutions susceptable of excitement, may not be inapplicable to the present enquiry.

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* The reader may consult with very great advantage on this subject Dr. Thompson's Lectures on Inflammation, 8vo. 1813. He says—"No attempt, so far as I know, has hitherto been made to arrange, or even to enumerate, the causes indirectly producing inflammation. These causes, however, are highly deserving our attention; and on examination will be found to be more numerous, I believe, than has usually been imagined." p. 56—7.

CLASS—IRRITANTIA.

ORDER 1.—ERETHISMI.

External Injuries or Irritants in which no evidences of Poison could be discovered.

SECTION I.—MECHANICAL.

Genus 1. Contusions
2. Abrasions
3. Friction
4. Pressure
5. Fractures
6. Lacerations
7. Punctured Wounds.

a. From clean Needles
b. Pins
c. Lancets
d. Buckles
e. Knives
f. Scissors
g. Forks
h. Swords
i. Nails
k. Thorns
l. Skewers
m. Awls
n. Glass
o. Fragments of Stone
p. of Shells
q. Splinters of Wood, &c.

SECTION II.—PHYSICAL.

Genus 1. Corns
2. Warts
3. Wens
4. Tumours.

SECTION III.—CHEMICAL.

Genus 1. Blistering Plaister
2. Rubefacients
3. Excessive heat
4. Intense cold
3. Electricity, &c.

ORDER II.—VITIA.

Those furnishing dubious and uncertain grounds, short of absolute proof, for suspecting Poison.

Genus 1. Wounds received in dissection, or in opening dead bodies
2. Stings of wasps, bees, flies, &c.
3. Bites of bugs, leeches, &c.
4. Injuries from the bones of fishes, hares, and other animals
5. Hurts from rusty nails, chains, &c.
6. Bites of cats, dogs, rats, foxes, and animals, not rabid.

ORDER III.—VENENA.

Sufficient data to confirm the idea of morbific Matter.

SERIES I.—ANIMAL.

Genus 1. Inoculation for Variola
2. Vaccinia
3. Syphilis
4. Psora
5. Bites of rabid animals
6. of the Viper
7. of the Rattle-snake
8. of the Cobra di capello, &c.

SERIES II.—VEGETABLE.

Genus 1. Tobacco
2. Hemlock
3. Opium
4. Digitalis
5. Aconite
6. Nettles
7. Woorara
8. Upas, &c.

SERIES III.—MINERAL.

Genus 1. Arsenic
2. Antimony
3. Mercury
4. Lead
5. Copper
6. Barytes, &c.

In surveying this enumeration of poisonous irritants, which act specifically, by virtue of their peculiar powers, we cannot fix on any one which could have been applied to the patients in the Dock-yard.

By the preceding arrangement, I have merely desired to draw attention to the diversity of ways in which local irritation may act, and to distinguish between mechanical, chemical, and poisonous irritants. It has not been my object to specify every means by which inflammation can be excited, but merely to shew the distinctions which we ought to attach, in private practice, to their actions.

SUSCEPTIBILITY.

Having dismissed the *first* question respecting the suspicion of poison, from a want of sufficient data, we next come to a consideration of the *second*—what is *susceptibility?* We mean a disposition to disease at one time rather than at another.

In medical language, we sometimes speak of a pre-disposition, which implies an hereditary taint, differing from the disposition, which is placed between susceptibility and action.* We have examples in Scrophula, which may be brought into action by vaccin-

* See Adams on morbid Poisons, 4to. p. 8. where these distinctions are more fully laid down.

ation in a habit pre-disposed to it; but Scrophula cannot be conveyed by inoculation.

We also speak of causes, predisposing and remote; but we imply nothing more or less than a tendency in the human body to throw out disease at one time from local excitations, which do not influence it at another.

"A cause," in the correct definition of Dr. Brown,* "may be said to be that which immediately precedes any change; and which, existing at any time in similar circumstances, has been always, and will be always, immediately followed by a similar change."

We regard a cause, therefore, as the antecedent to any change, and the effect as a consequent. The relation or disposition we place between the power or cause and the susceptibility, which properly refers to the effect.

We say of a local injury that it has the power of exciting fever in the constitution; and of the constitution that it is susceptible of fever from a local injury; but we merely imply the necessity of the two conditions, viz. that of local excitement and susceptibility, "existing in similar circumstances," to account for the phenomena.

In the production of this disease, we only

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* On the Relation of Cause and Effect, 8vo.—Edinburgh, 1818.—p. 17.

required a habit susceptible of action, and an agent capable of kindling irritation. One circumstance has been proved, that fever may arise from local injuries more frequently than is expected, and that the real cause may not be discovered before death.

There are numerous examples to illustrate this susceptibility. Some children, in whom it is deficient, must be vaccinated several times ere they receive infection. Others may exhibit local signs of infection, and yet betray no constitutional symptoms; but we ought neither to be satisfied that the virus has taken a proper effect, unless the constitution evinces some signs of its action, nor that the liability to small pox be securely exterminated, of which nearly all children are considered susceptible, though some persons may never have this disease.

We have abundant reason to suppose that the influence of the cow pox is an effectual preventive against the contagion of small pox; but we want further proof of its permanency. We know that the innate susceptibility may be destroyed for a time, but we cannot say for how long, as the small pox have been known to appear in people who had passed vaccination. It is to be hoped, however, that the cow pox may be able permanently to eradicate this inborn susceptibility in the human constitution

generally, and that the few instances of small pox occurring after vaccination, may be regarded as scattered exceptions to the general rule; but the question respecting its infallibility does not invalidate the practice of vaccination, which, in my opinion, is deserving of trial, if it succeed but once in twenty times in preventing or exterminating the liability to that loathsome disease—the small pox.

With respect to the wounds inflicted on the fingers, when they are besmeared with animal fluids, it is not easy to say whether or not any morbific matter might have been absorbed, for all anatomists are not decided on this subject. Sometimes a morbific matter may be detected, but not always.

We may infer, from the readiness with which some fluids are absorbed from the skin, that they quickly get into the blood. Soon after the immersion of any part of our skin into oil of turpentine, it may be detected in the urine. The Painter's Colic is produced by absorption from the skin, no doubt, as well as from the lungs. When ill consequences arise from the bodies we open, they are frequently supposed to proceed from the diseases of which the patients have died; but I find that the butchers, who kill cattle for the contractors

at this port, sometimes suffer from wounds inflicted by knives, hooks, splinters of bone, &c. I sent for one man, who has killed and dressed an immense number of bullocks, frequently twenty in a day, in time of war, during the last eighteen years, and who, though he is the most dexterous and quick slaughterman I ever saw, has frequently cut and bruised himself, and suffered from inflammation of the absorbent vessels. Not long ago he slightly cut his left fore finger; inflammation of the absorbent vessels along the whole arm ensued, with an enlargement of the axillary glands; but no abcess formed, nor did any further constitutional symptoms follow. The cornea of his right eye was once cut through by a splinter of bone, and afterwards bursted by the blow of a hook, when fever ensued. He supposes that there arises a morbific matter which produces the inflammation, though these injuries are not always followed by inflammation of the absorbents. Wounds produced by splinters of bone are considered to be worse than those from knives, but he cannot recollect an instance of death from them.

Dr. COLLES thinks that an amber-coloured serum is sometimes the cause of the fever arising from wounds contracted in dissection; but there is a want of proof to shew why this

fluid should act on persons whose, health had been previously injured by dissection, rather than on others in good health. If it be a poison, it ought to act generally; if, on the contrary, it be not a poison, we must refer the irritation of the injuries to certain susceptibilities of the constitution.

I have been lately favoured with a letter from Dr. COLLES, leading me to expect "another paper on the subject of these accidents in the forthcoming volume of the *Dublin Hospital Reports*" which is expected soon to appear. Sir ASTLEY COOPER remarks that pupils get ill from dissection about the end of the season; and Dr. COLLES says, "*I have found most of the instances of the inflammation and fever following wounds received in dissection, amongst those pupils, who have arrived at the third season of their anatomical pursuits;*" and he further thinks that "*putrefaction gives protection to the anatomist.*"* These occurrences are proofs of susceptibility, as well as of poison.

In April, 1811, I nearly fell a sacrifice to the business of the dissecting-room, owing to dysentery and fever, which I had resisted up to that period, when my health broke to an extent, from which I had great difficulty in recovering.

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* Dublin Hospital Reports, Vol. 3. p. 219—221.

Perhaps Mr. ABERNETHY's is the correct opinion after all—he says that evil consequences arise from these injuries, because the patients are out of health at the time; and attributes the sources of disorder to some previous derangement of the digestive organs. Further, that he can see no evidences of poison; but thinks that putrid matter may occasionally exert an influence.

This explanation may certainly account for that uncertainty and irregularity with which irritation occurs. In contusions and abrasions, we can trace the phenomena more decidedly, and clearly see that no poison could have operated in many persons.

But I was desirous of ascertaining the prevailing opinion with some of the most experienced Anatomists in this country, on the subject of these accidents, and therefore proposed a series of questions, which I see no necessity for recapitulating, as they may be inferred, in a great measure, by the annexed answer, which I am permitted to insert.

I have great satisfaction in laying before my readers the following letter, with which I have been favoured from Sir ASTLEY COOPER, whose opinions are justly entitled to considerable weight, with whom it is a pleasure and an honour at all times to confer.

"*Spring Gardens, London,*
March 2d, 1825.

"Dear Sir,

"In answer to your enquiries, I have to observe—

"1st. That I have given Anatomical Demonstrations since 1788, and Anatomical Lectures since 1791.

"2d. I have frequently seen irritative fever produced by slight wounds in dissection.

"3d. I am of opinion that such irritative fever generally arises independant of absorption of morbific matter, but I have seen two instances of the contrary.

"4th. Death has sometimes ensued from these injuries, when the local injury has been apparently very slight.

"5th. I have only once severely suffered from a wound in dissection, and then it was the result of an injury upon my thumb, in dissecting a person who had been executed the day before. The symptoms were pain in the injured part, swelling, inflamed absorbents, enlarged absorbent glands in the axilla, irritative fever, a continued sore throat, an inflammation, first in my left, and after a few days, in my right knee. Medical means relieved, but did not cure me, but I recovered by going into the country.

"6th. My plan of preventing irritation has been, to put the point of a lancet into the puncture, to make it an incised wound, and to touch the part with Argentum Nitratum to destroy the vitality of the wounded surface. The *general* treatment of irritation consists in restoring the secretion by giving Subm: Hyd: cum Opio et Pulv: Antimon: the Liquor Ammoniæ Acetatis cum Magnes: Sulphat:—The *local*, in applying Fomentations and Poultices. Gravitation of the blood into the part is to be prevented by attention to posture; rest is required; abstinence from all stimulants is necessary, as they do harm.

"7th. Local blood-letting is highly useful. From twenty to thirty leeches should be applied upon the limb if the symptoms are severe.

"8th. I have repeatedly known some persons die; but othershave had violent symptoms and have recovered, from punctures by needles, forks, broken shells or bones, from scissors, penknives, and skewers.

"I am, your's truly,

"ASTLEY COOPER.

Dr. Butter, Plymouth."

I had proceeded thus far, when my attention was drawn to a very interesting paper, contained in the *London Medical Repository*, No. 16, vol. 3, p. 280, April, 1825, by Dr. Todd Thomson, the ingenious author of a Conspectus of the Pharmacopœias, on the subject of his own late attack. He says—"*I received a slight scratch on the first joint of the fore finger of the right hand, owing to the needle turning suddenly round whilst I was forcing it through the integuments of the body*" of a woman who had died of pleuritic Rheumatism. Twelve hours afterwards slight pain and inflammation came on, break of rest and profuse perspiration followed; a pustule containing a globule of matter formed in the scratched part. Fever supervened, with rigors and fainting, extreme prostration of strength orthopnæa, and pain at the xiphoid cartilage, delirium, and a quick vacillating pulse, "*which would have authorised bleeding, in the hands of an inexperienced practitioner.*" The pain of the finger extended up the arm to the axilla; but it does not appear that the absorbents were inflamed.

The curative means resorted to were—Camphor, Ammonia, Colchicum, Cayenne-Pepper; Calomel, Jalap, and Supertartrite of Potash, as purgatives; James's Powder and Henbane; incision through the Fascia

down to the bone, Fomentations and Poultices to the finger, Semicupium.

There is no doubt that Dr. THOMSON owes his life to the judicious treatment pursued by himself, Dr. GRANVILLE, and Mr. BRODIE, and that it might have been lost had general blood-letting been adopted.

Dr. THOMSON draws the following Corollaries :—

1. That a virus is generated which produces irritative fever.

2. That a predisposition *(susceptibility)* of the body is necessary for its action.

3. That the nervous energy is diminished by the absorption of a virus generated in the wounded part; that the heart's action is nearly destroyed by it; and that congestions, sometimes fatal, are produced in the vascular trunks.

Experience shews that these evils occur more frequently after dissecting fresh than putrid bodies.

Dr. THOMSON had been previously harrassed in body and mind, and was not in the best state of health.

So slight are those scratches, which kindle irritation, that, I believe, they are frequently overlooked, and the really exciting cause of fever, commonly called *Idiopathic*, neither

understood* nor allowed in many instances.

The ancients have recorded differences which we daily observe in the constitutions of different people. They noted down certain temperaments—1. The sanguineous—2. The bilious—3. The melancholy—4. The phlegmatic—and 5. The nervous. But there were some peculiar temperaments discovered by accident; as, for instance, in those people whom astringents purge, and opium does not affect with sleep—and these were called Idiosyncracies.†

We know also that some people have a greater disposition than others to inflammation, to gout, &c. and these are called Diatheses. ‡

* I beg leave to refer the reader to this instructing paper, in the *Medical Repository*, and to request him to contrast it with the case of the late Dr. BELL, p. 57, et sequent: of this work; regretting that Dr. THOMSON's example has not been more generally followed by Medical Men, of publishing cases of this description, with a view of determining precisely the nature of such injuries, and of eliciting a certain and successful method of treating them. Another instance of irritative fever, arising from a slight scratch on the middle finger, and from the supposed absorption of matter from a scrophulous sore, is recorded by Mr. JOHN ANDERSON, in the *London Medical and Physical Journal*, for February, 1825. This lady died, and the servant was similarly affected, but recovered. These cases have certainly been either more frequent of late, or better understood.

† ἰδιος, peculiar—Χρασις, temperament.

‡ διατίθημι, to dispose.

I merely draw attention to these distinctions, or varieties, in the animal economy, before I proceed to exemplify the nature of susceptibility.

OPIUM AND EMETICS.

I know a lady in this town, whom opium disturbs and deprives of rest. I also knew a young man, who took two strong emetics without feeling the slightest nausea, or even any sensations but those which were unusually comfortable.

BUGS AND LEECHES.

Two people, even of the same family, may sleep in the same bed, inhabited by bugs, the one shall be bitten, and the other spared; or both may be bitten, and only one swollen blind. These animals detect or prefer certain states of the constitution, and prove that the one person is much more susceptible of their irritation than another. We observe similar occurrences with leeches. I have frequently known patients, at the *Plymouth Eye Infirmary*, swollen blind, after the application of leeches, and occasionally attacked with erysipelas; and some people fancy that these animals have poisoned them, but there are no evidences of this assertion, and therefore we refer such occurrences to idiosyncracies of habit, rather than to specific virus.

BLISTERS.

I was once called to see a child, to whose breast a blister had been applied; sloughing had ensued, and the sternum and ribs became bare. The alarmed mother was inclined to censure the medical adviser, and to suspect the purity of the blistering-plaister, until I assured her that such occurrences did sometimes take place in gross habits of body. The mother herself could never bear the least external irritant without suffering unusual exeitement. Cautions have been given by BAGLIVI* and HOFFMAN,† on the subject of blisters.

ERUPTIONS.

The skins of some people are so irritable, that wheals will arise from merely drawing the nail over them. Eruptions and cutaneous diseases are much more likely to appear in spring and summer than in winter.

BOUGIES.

I knew a young and athletic officer who had a caustic bougie passed down his urethra. He lay on the grass afterwards, in the summer season, reading a book—erysipelas phlegmonodes first struck to the perineum, passed down the cellular substance of one thigh and leg, and formed extensive collections of puri-

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* De usu et abusu Vesicantium, cap. 1. p. 648.

† De Medicamentis officinalibus, 4to. Jenæ, 1686.

form fluids, which distended the limb to a huge and terrific size, then attacked the opposite thigh and leg, and ultimately drained him to death. The cause was laid to the damp ground, but it was much more probable that the local irritation of the bougie had roused into action a latent propensity to this disease.

Mr. HUNTER observed, that ague might be produced in some people by the presence of a stricture in the urethra; Mr. ABERNETHY has confirmed this observation; and I perfectly recollect a patient of mine in this town, a sailor, who had experienced periodical attacks of intermittent fever before I cured his stricture. Mr. HUNTER has adduced the fact as an instance of universal sympathy; but it also shews how susceptible certain constitutions may be of local irritation.*

HÆMORRHAGE.

Some people cannot have a tooth drawn without bleeding for days. Death has ensued from this simple operation—others faint at the sight of blood. I have also heard of a bleeding family.

WOUNDS.

With respect to the healing of wounds, dif-

* This subject is most ably discussed in Mr. HUNTER's work on the blood, and also by Mr. ABERNETHY, when speaking "On the constitutional origin, and treatment of local diseases," to whose book I beg to refer the reader.

ferences have also been observed; a wound on one person will heal quickly, in another slowly, or in the same person speedily at one time, and tardily at another; or an ulcer, nearly healed, may even burst out, slough, and excite fever, depending on the health of the subject.

ULCERS.

When I was a dresser at St. Bartholomew's Hospital, in London, I kept notes of the subjoined case :—

1810, February 15th.—George Osborne, æt. 42, was re-admitted as an in-patient under the following circumstances :—He had been in the house about a fortnight before, on account of some injury done to his chest by the upsetting of a cart, which also produced a slight scar on his right leg, to which superficial dressings were applied.

He remained about four days in the Hospital at that time, became better without bleeding, and was discharged with a strict caution against intemperance in drinking, to which he had been addicted. On this evening the scar on his right shin was surrounded with erysipelas, which had extended itself up the thigh and inner side of the knee to the groin, in red streaks.

On the 16th, the leg became still more inflamed—delirium appeared—his tongue was

much coated, and his bowels constipated.—Fomentations and cataplasms were applied, and purgative medicines, with tartar emetic, ordered.

17th, 18th, and 19th—Worse—bowels open—erysipelas spreading—delirium increased. Antimonial and saline medicines ordered.

20th, 21st, and 22d—Inner part of the thigh of a deep and dark red—the whole limb œdematous—tongue brown—pulse frequent—vomitings, hiccough, stupor, and delirium, oppressed him—retention of urine had come on—a catheter was introduced into his bladder, and some alkalies were added to his medicines. He had taken bark, wine, and opium, for two days. These medicines were continued.

23d, 24th, and 25th—The retention of urine* was relieved, but all the other symptoms were aggravated, with an increase of stupor, confusion, and hiccough. His stomach eventually rejected both food and medicines. He fell into a state of insensibility, and died at *seven o'clock, P. M. on the 26th,* eleven days after his re-admission, and twenty-five from the date of his injury.

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* In similar affections of the leg and thigh, retention of urine is not an infrequent symptom, for the irritation excited in the cutaneous nerves is communicated along the anterior crural

1812, June 3d. I attended a soldier called CHARLES SAGE, æt. 46, a very florid, healthy, and muscular subject, who had an ulcer on the small part of his right leg, produced by a burn. It had nearly healed, and broke out again with surrounding inflammation.—The sore was dressed with calamine cerate, and a purgative ordered.

On the 6th he complained of general languor, of pain in his head and back, of nausea, and sickness. In the evening he was attacked with rigors, which were followed by flushing and copious perspiration—his tongue was slightly coated, pulse 80. But then there was a peculiar expression of anxiety in his countenance. He took some calomel and antimony, and afterwards a purging draught—his leg was fomented and poulticed.

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nerve to the urinary bladder, to which some twigs are sent by this nerve before it quits the pelvis, or after it has been formed, by an union of the 2d, 3d, and 4th lumbar nerves. I have asked the question, but not found that retention of urine was noticed in NICHOLS, or in the other patients, whose cases bear an analogy to the one now recited. If I recollect accurately, Mr. ABERNETHY mentions, in his lectures, that retention of urine has occurred in a case of compound dislocation of the ankle joint, owing probably to an injury of the cutaneus longus, or nervus saphœnus, which is a continuation of the anterior crural nerve to the inner ankle and foot, by the side of the saphœna vein.

On the 7th he took an emetic which discharged a quantity of green bile.

8th and 9th. Pyrexia continued with pain in his head and back.

10th. Rigors more severe than usual—he was restless and uneasy suffering excruciating pain up the affected leg and thigh, and also in the right arm. His ulcer had been graually healing, and was not at all inflamed, yet it was evident that some irritation had been communicated to the system from the ulcer. He went into the warm bath, which produced copious perspiration, took an anodyne, and applied a blister to his chest.

11th. I was called to him *at 3 o'clock in the morning*, as he was considered to be dying. His limbs had felt during the whole night as though they were frost bitten—he had been deprived of sleep from not being able to lay back in the bed—his breathing was most difficult and laborious, his circulation was very much hurried, his lips livid, and his countenance expressive of greater anxiety and distress than I almost ever witnessed in any preceding instance. He complained dreadfully in all his muscles, muttered a few incoherent sentences, and died at *half-past five o'clock* on this morning.

Remarks.—I never could account for this man's death. The ulcer exhibited a healthy

aspect to the last, and healed daily under this increasing irritation—both thighs became very œdematous, and spotted of a purplish hue—the absorbent glands in the right groin were somewhat enlarged, hardened, and reddened, when a section of them was made, as though some irritating matter had passed through them, yet the absorbent vessels in the thigh were never inflamed apparently—the inguinal glands on the left side were not so affected; but both arms were œdematous—the thoracic and abdominal viscera were all sound, with trifling exceptions—there was a slight blush on the villous coat of the stomach, and a trifling congestion on the posterior part of the right lung, and a pallidity of the liver, which would scarcely have been noticed, had more serious derangement been discovered.

1813, May 13th, being at Huddersfield, in Yorkshire, with the regiment, I was desired to visit, at night, an innkeeper, called Samuel Wood, æt. 52, who lived at the distance of several miles in the country. He had on the 5th of that month struck his right leg, over the shin bone, against the stairs, in going to bed intoxicated. A considerable degree of erysipelatous redness prevailed from the ankle to the knee, the absorbent vessels were much inflamed up the thigh, and the inguinal glands

enlarged. It was a genuine case of erysipelas phlegmonodes. He had nausea, a frequent disposition to vomit, rigors, an irregular pulse, about 96, and a dry tongue. He was also delirious during the preceding night, and refused all food but liquids—he had been a very hard drinker, and frequently threatened with apoplexy. Fomentations and fermented poultices were applied to the limb—bark and wine ordered. I understood that he died in a comatose state on the 16th, (three days after my visit, and thirteen from the injury) of mortification, though I kept no further notes of his disease.

This case may not be inaptly compared with those of NICHOLS and REEVES.* At that time I was not aware of the advantages of incision, of which I have already spoken, in the instance of the latter person.

Mr. HUNTER has well illustrated these predispositions to new diseases in the cure of syphilis, which is sometimes supposed to terminate in other diseases. His words are—"I have seen a chancre the immediate cause of erysipelatous inflammation; but the venereal malady did not terminate in the erysipelatous inflammation—for if it had, the chancre would have been cured: nor was the erysipe-

* See pages 35 and 112 of this work.

latous inflammation venereal;—the chancre only acted here as a common irritator, independently of the specific quality of the disease as a cause. I have known a venereal bubo become a scrofulous sore as soon as the venereal poison was destroyed by mercury: this was not a venereal terminating in a scrofulous affection—for in such a view the scrofula must have cured the venereal."*

He has also described the susceptibilities of the constitution, calling them "*first in order*" and "*second in order*," and properly distinguished between disposition and action in the cure of diseases; but I am surprised to find how little attention is paid in practice to his excellent remarks.

INOCULATION.

Fatal erysipelas has been known to supervene on inoculation, both vaccine and variolous, in constitutions highly susceptible of irritation.† Yet erysipelas cannot be conveyed by inoculation. It must have pre-existed in the habit, and awaited some local irritant to bring it to the surface, as CULLEN has very properly remarked--"*I suppose the erysipelatous matter to be generated within the body, and which, analogous to the other cases of exanthemata,*

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* Hunter on the Venereal, by Adams—sect. 5. p. 363—445.

† Medical and Physical Journal, January, 1801.
Bateman's Synopsis, p. 129.

is, in consequence of fever, thrown out upon the surface of the body.†

TUMOURS.

In May, 1813, when the South Devon Militia was stationed at Huddersfield, where I gave my advice gratuitously to the poor, I removed seven encysted tumours, of the mellicerous kind with their cysts, of sizes varying from a sparrow's to an hen's egg, from the scalp of a woman called ANNA SHAW, æt. 47. All the incisions healed by the first intention; but on the second day following the operation, erysipelas appeared on the face and head, and ran the usual course of vesication and desquamation, producing delirium and other formidable symptoms, which threatened the destruction of her life; but by rectifying the deranged state of her digestive organs, which were very wrong, and by subsequently giving bark, this woman recovered. The local excitement, occasioned by the operation, called into action the pre-disposition to erysipelas, to which she had been subject in the former part of her life.

I have heard of similar instances, which occurred in the practice of others, and proved fatal. But there must be first something wrong in the habit to form these

† Cullen, vol. 1. p. 373.

parasitic bodies, and afterwards to suffer irritation from clean incisions, which, it is remarkable, generally heal, though the erysipelas proceeds.

Mr. ABERNETHY mentions, in his Lectures, the case of a person who died from having a wen punctured. Violent erysipelatous inflammation took place; it was followed by sloughing. The inflammation extended down that side to the groin, and to the opposite side of the chest. The constitutional derangement was as violent as the local, and he died in a week.

This case shews the danger of disturbing wens of an irritable nature, or in an irritable habit.

I have removed scores of tumours of different kinds, but never more than once witnessed this sort of consecutive irritation.—Had many such instances occurred within a given time, some poisonous matter might have been suspected on the knife, sponges, &c.

PUNCTURES.

One of the greatest ornithologists whom we have known in this country, who resided at no great distance from Plymouth, ran a nail into his foot when walking in the garden, and died from the consequences, which were first local irritation, followed by constitutional

disturbance. This instance may be contrasted with that of COWLE.*

During my practice of about fifteen years, I have never known but two patients whose veins inflamed after bleeding, and both these were men in bad health. One died, and the other lived. The man, who died, had abscesses in the lungs, effusion into the bag of the pleura, and an abscess on the pomum adami, the specimen of which I have preserved.—I also preserved the vein, which was consolidated like a chord, but have lost it.

When the veins of horses inflame, the mischief is attributed to a rusty lancet, to carelessness in the operator, to the insertion of hair between the divided edges, or to the pinning of the coats of the vein, or to the admission of air, whereas, I believe that it may be referred entirely to peculiarities of habit in many instances.

Tetanus, or locked jaw, I am convinced occasionally arises from a similar susceptibility, in consequence of cropping the ears and tails of horses thus unnaturally treated.

GLASS.

On the 3d of June, 1815, a friend informed me that he had lost a very valuable mare owing to the following accident. The mare,

* See page 1.

which was in high condition, and which had been accustomed to hunting, was put into a field with hobbles about her legs to prevent her jumping over the fences. In the course of the night some cart-horses *broke* into the pasturage, and on the following morning a wound was observed on the mare's hind leg between the stifle and hock joints, which correspond to the knee and ankle joints in the human subject.

The accident was naturally attributed to a kick from one of the cart-horses, and a reparation of damages was contemplated. I proposed an examination, which led to the discovery of a piece of black bottle glass, about one and a half inch in diameter, lying in the wound over the tibialis anticus muscle. This glass had awakened the susceptibilities of the constitution and excited the inflammation of the limb, the swelling of the side, and the fever, of which this valuable animal died.—Thus were the cart-horses exculpated, and the evident or exciting cause of the fever unfolded.

FRACTURE.

Almost every case of compound fracture does well in the country; but in London it is a most rare occurrence to find a person surviving such an accident, and therefore limbs in London are removed, which we save

in the country. It is also remarked, that brewers' servants, who drink quantities of porter, do very ill under these accidents in town.

STONE.

Morbid susceptibilities may exist in a person, whose health is apparently good, or may be acquired at one time, and lost at another.

A surgeon might have operated for stone with success in many persons, and at last he may cut a patient, in whom the susceptibility of excitement exists, and inflammation, as it is called, will arise, which the free use of his lancet, of injections, and other means, cannot arrest.

The patient dies, and the unfortunate result is attributed either to the force used, to the small quantity of blood lost, to spasm of the bladder, and to other circumstances, whereas the dissection will prove that the bladder, and perhaps the peritoneum, are in a high state of inflammation, which was probably of the erysipelatous kind, otherwise it ought to have yielded to antiphlogistic measures.

I do not mean to say that a surgeon ought ever to be deterred from operating by these considerations, for if he takes every precaution to prepare the body well, and to per-

form his operation with a masterly hand—"*tute et celeriter*"—he ought to feel no chagrin at the result, however untoward.

All that I mean is—there must be something like a susceptibility to irritation, or what is called a peculiarity of habit, to account occasionally for some of the irregular circumstances met with in practice. Hence the necessity of preparing the body as it is called, for an operation.

PUERPERAL FEVER.

Accoucheurs tell us, that for many seasons they scarcely lose a patient with puerperal fever; but in others the fatality may be locally so great, under equal management, especially in crowded cities, that they almost dread to attend a woman in her confinement.—How are these changes to be accounted for?

A woman is delivered in January of a child, and does very well; the same woman may be again brought to bed in December, and die of puerperal Peritonitis; proving that in the former month there was no disposition to disease, and in the latter, that the susceptibilities were easily roused.

Dr. Douglas says, that puerperal peritonitis prevailed in the Dublin Lying-in Hospital, as an epidemic, during the years, 1803, 1810, 1811, 1812, 1813; but during the winters of 1819 and 1820, "*it exceeded in duration*

and fatality, any that ever occurred within the British dominions."*

Dr. DOUGLAS considers *debility* as constituting the susceptibility to this disease, (p. 146.) and thinks that it may prove contagious only to such persons as are, owing to debility arising from bad health, hæmorrhages, &c. rendered susceptible of its influence.

PSOAS ABCESS.

Psoas abcess sometimes works its way into the groin, and bursts, without proving fatal; but occasionally the most horrible consequences ensue from the admission of air, as it is supposed; but this cannot be always the case, and therefore we infer that some constitutions more readily take on irritation than others, in the cyst of a lumbar abcess. Hence the judicious and approved practice first recommended by Mr. ABERNETHY, of opening these abcesses, and closing the aperture immediately and carefully.†

FRICTION.

There can be no poison in salt water. Dr. HUTCHISON attributes the origin of erysipelas phlegmonodes in sailors, to the immersion of their legs in salt water, and to the friction of

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* Dublin Hospital Reports, vol. 3, p. 142. et sequent:

† See Surgical Observations on Tumours and Lumbar Abcesses. London, 1811.

their wet trowsers on the naked skin. But out of the great number so exposed, only forty-one cases in six years (scarcely seven in a year) were admitted into the Naval Hospital, at Deal; leading us to suppose that these men were susceptible of irritation from friction, &c.*

I do not seek to multiply these examples, because there is no necessity, as a few will suffice to direct the enquiry to these variations in the animal economy, to which I have adverted, in order to explain the relation of cause and effect, in accounting for the phenomena of this disease.

CORNS.

Instances of death from cutting a corn with a razor have been known, but such accidents only occur in irritable habits.

WARTS.

On the 17th of July, 1814, I was requesten to visit a woman, in Plymouth, whose life was very nearly lost by the irritation of a wart, which grew on the ball of her left thumb. She had accidentally loosened it, and suffered so much subsequent irritation, that the wart could not be touched without electrifying her whole frame. The absorbents up the whole arm were inflamed, the axillary

* Medico-Chirugical Transactions of London, vol. 5. p. 279.

glands enlarged, and an abcess bursted on the back of her hand. She recovered this attack, but died in some months afterwards from a gastro-bilious fever, and an affection of the knee joint.

BITE OF A RAT.

When I was preparing these sheets for the press, *on the 30th of January*, 1825, a servant woman æt. 38, named ELIZABETH HOWES, living with Mr. HYNES, a respectable butcher, at Stonehouse, came to me, as I understood, by the desire of Mr. EVENS, an intelligent druggist. She said that on the preceding Wednesday, the 26th, about 8 o'clock in the evening, she pulled a rat out of a hole by the tail, and the animal bit her right fore finger, between the 2d and 3d joints on each side of the extensor tendon, very deeply, continuing his gripe for some time, and grating his teeth against the bone.

The wound bled freely for some minutes.—For the last two days she had felt an increase of pain in the finger with stiffness in the arm, but during the preceding night she had been sick, shivered, and flushed, when the arm became hot and painful. There were now chains of absorbent vessels vividly inflamed, on the internal surface of the right arm, extending even to the arm-pit, where the glands were enlarged. They could be seen crossing over the radius to the inner side of the arm,

and their valves looked like whitish knots. Her skin was also very dry; but her tongue, though a little coated, was moist. There was also a dullness about her eyes, with an expression of concern and apprehension.

I ordered her to apply 12 leeches, to foment the arm, and to take a bolus immediately, composed of 5 grains of Calomel and half a drachm of Jalap.

I aftewards called on her with Mr. Charles Isbell, surgeon, at Stonehouse, who cut down on the tendon between the two punctures, and made an open ulcer by the nsertion of some lint. A poultice of yeast and oatmeal was afterwards enveloped around the finger.

The leech-bites bled freely, and the bolus brought off from her bowels a quantity of greenish, lumpy, and offensive stuff.

31st. I desired Mr. Dryden to see this woman with Mr. Isbell and myself, and was surprised to find that the redness had almost entirely quitted the arm, leaving a doughy discolouration. She complained, however, of great pain in all her joints and different parts of the body, as though she had been beaten, of restlessness, anxiety, and sinking at the stomach, with frequent yawnings, and singing in the ears. Pulse about 100; she had also been delirious during the night, and talked incoherently.

We judged it right to continue the poultices, and to cleanse out the bowels with a solution of Epsom Salts in an infusion of Senna, and to direct Calomel and Opium at night.

1st of February. She still complained of great sinking at her stomach, and of an affection in her throat, as though she could not swallow; but the sight of liquids did not distress her.

I ordered the following mixture:—

℞: Decoct: Cinchonæ ℥ vi.
Cinchon: Lancifol: Contr: ʒ ij.
Spt: Ammon: Aromat; ʒ iss.
Tr: Gentian Comp:
—— Cinchon: —— āā ʒ iij.
M: ft: Mist: Capiat Cochl: ampla tria omni 2da horâ.

She found great relief from the mixture, of the oppression at her præcordia, and of the disposition to faint.

2d, 3d, and 4th of February. She continued the Bark with Soda, and Pills with Opium and Antimony, at night.

So rapid was the waste of muscular energy in this woman, that the first time she attempted to get out of bed she fainted and fell on the floor.

On the 16th an abscess broke in her throat,

and discharged both blood and matter. On the day afterwards she eat animal food for the first time, as her appetite had not before returned. The debility here was entirely owing to the disease, and so excessive, that had she been blooded, I need not predict that her life might have been lost.

This woman had been a patient at the *Plymouth Eye Infirmary*, for a strumous ophthalmy, which was completely cured by the treatment pursued during her late attack, without the aid of topical applications.

HOSPITAL GANGRENE.

Before I quit the consideration of those external irritants, which rouse into action the morbid pre-dispositions of some people, and produce only a commonly local effect in others, in whom no such predisposition may exist, I may introduce the following appropriate remarks from a recent work on British Military Surgery, which comprises in itself as great a fund of the disastrous events, and chirurgical operations, which occurred in the late Peninsular war, as any other work with which I am acquainted :—

Dr. HENNEN, in speaking of hospital gangrene, says—"The slightest scratch of the dissecting knife festered; ulcers, whether simple or constitutional, became gangrenous; wounds long healed broke up, and fell into a

state of foul suppuration; nay, the skin, although perfectly sound, which had been touched with a sponge employed in washing the gangrenous sores, ulcerated, and soon became itself a slough. This was often observable among the orderlies and nurses."*

He also says—"The skin and cellular substance, whether loose or condensed, seemed to be the parts originally and principally affected in the disease at Bilboa,"—219; and properly remarks, that the air is so peculiarly tainted as to be discovered by the senses in wards, occupied by patients affected with hospital gangrene.

I might easily augment the number of instances of fever and death, produced by the action of local stimulants applied to some part of a body pre-disposed to disease; but, I think, I have said enough to shew that it matters very little what the local excitement is, so long as there exists a constitutional sus-

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* Hennen's Military Surgery, 2d edition, 1820, p. 218.

See also Blackadder's able account of Phagadæna Gangrænosa.

M. Brugman de l'Etat et de la composition de l'Atmosphere.

Larrey's Memoires de Chirurgie Militaire, tom. 2. p. 18.—Paris, 1812.

Guthrie on Amputation, 8vo. London, 1815. p. 63.

Quesnay Traité de la Gangrene.

Hunter on the Blood, &c.

Thompson on Inflammation.

ceptibility.* I shall, therefore, next advert to the action of other agents, adducing the following quotation from so old a writer as GALEN, who advanced a similar opinion, which has been entertained and promulgated by medical observers since his time.

* Should the reader wish for further information on this subject, he may consult the following works with advantage:—

Abernethy's Surgical Observations, vol. 11. p. 134.

Mr. Travers's case, in London Medical and Physical Journal for February, &c. 1823, p. 176.

Morand, M. Histoire de l'Academie Royal des Sciences, année 1766, account of two butchers, who were affected with a very singular disease.

Sir E. Home, in Philosophical Transactions of the Royal Society of London for 1810, p. 75, on the Bite of a Rattlesnake.

Edinburgh Medical Commentaries, vol. 4. p. 210.—1776.

Ambrose Parè's Account of Charles IX. p. 223.

Hodgson on the Diseases of Arteries and Veins, 8vo. London, 1815. This is a very valuable work.

Edinburgh Medical and Surgical Journal, vol. 5. p. 175.—for Mr. Oldknow's account of an inflamed Saphœna Vein.

Precis Elementaire de Physiologie par F. Majendie, tom. 2. 8vo. Paris, 1817. This author denies absorption of any morbific matter generally; but allows that a putrid miasm produced Professor Lecler's death.

Dr. Duncan, junr. has published a most elaborate and comprehensive Essay on Injuries of Veins, and diffuse inflammation of the Cellular Substance, in vol. 1. of the Medico-Chirurgical Transactions of Edinburgh, p. 455 to 650, and given a condensed and very satisfactory body of information on this important subject.

See also Guthrie's work on Gunshot Wounds and Injuries of the Nerves, pp. 100 to 111, 8vo. London, 1820.

GALEN has well described this disposition brought into action by local excitement, in the following words :—

"That the body being in a manner prepared for the reception of a disease, the intervention of an external cause shall raise a fever which of itself would have been insufficient to have produced any distemper of consequence, &c. but, through the disposition of the body, becomes ratherthe occasion, than, properly speaking, the cause, of the distemper. This sort of external causes has been termed προφᾶσεις."*

SUSCEPTIBILITY COMING INTO ACTION WITHOUT ANY LOCAL PROVOCATION.

I have been hitherto considering the existence of a morbid propensity in the human constitution, when such is neither suspected nor proved, until it is roused into action by some external irritant; but the constitution may be so charged with disease as to throw it out on the surface without any adventitious excitement or aid whatever.

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* Van Swieten's Boerhaave, vol. 1.p. 24. 1765.

Corpore nostro ad morbos quasi præparato, externum quoddam adveniens febrem accendit, quod ex se morbum vehementem minime generaret, &c. sed propter corporis dispositionem unumquodque horum non morbi causa sed occasio redditur, has causas vocaverunt, προφασεις.

Comment. 4. in Hippocrat. de victu acut. tom. 11.p. 178.

We find it the case with most of the cutaneous diseases, and particularly with gout and erysipelas. This last disease may come on without any local excitement from constitutional causes, or it may supervene on some local injury—the former being called *medical*, and the latter *surgical* erysipelas.

Galen has well observed, that no person can be said to be in perfect health, though we say that people are in health if they make no complaint, and discharge the common offices of life.

"Perfecte sanus memo dici potest, sed sani dicuntur, qui nullâ corporis parte dolent, et ad vitæ munera haudquaquam sunt impediti."†

I will briefly detail two instances, which have come to my knowledge, in order to illustrate this part of the subject—for though a local excitement was suspected, none could be proved, and perhaps none really existed. Such cases are by no means uncommon.

My father, who has practised as a surgeon upwards of forty years at Woodbury, in this county, understanding from me the nature of the disease which occurred in the Dock-yard, sent the particulars of the following case, which recently occurred in his neighbourhood.

† De Sanitate tuenda, lib. 6. cap. 5. tom. 6. p. 170.

William Lug, æt. 51, a farmer, always a healthy man in appearance, residing in the parish of Colyton Rawleigh, was seized, in the month of January last, with a violent pain in the fingers of his right hand, followed by inflammation.

The first impression was that he had run a thorn into his finger; but, after a diligent search, none could be found. In order to cool the inflammation he immersed his hand into a running stream of water, which afforded temporary relief.

Fever however ensued, with sloughing of the extremity of the finger, which was amputated at the last joint; and, as the expected relief was not procured, the second joint was subsequently removed.

Paralysis of the lower extremities came on, with a suppression of urine. He died within a few days after his attack.

I was lately requested to visit in this town the wife of a shoemaker, æt. 45, after death, who was awoke in the night of the 7th of January, 1825, with a violent and pungent pain in the middle finger of the right hand, about the second joint.

The pain increased, with rigors towards morning. The first impression was that she had ran into her finger the bone of a hake

fish, which she had been cleaning on the preceding evening. She applied shoemaker's wax, but the pain got more acute.

A surgeon took some blood from her arm, and examined the finger, without discovering any puncture. Fomentations and poultices were applied.

The finger and whole arm swelled very much, and became both mottled and œdematous; a darting pain extended itself even to the axilla, through the medium of the inflamed absorbents, and fever arose, with nausea and gastric disorder.

An opening was made on the finger, and some bloody pus discharged. Sloughing ensued. Violent pain next established itself in a manner equally unaccountable to her, about the aponeurosis of her right foot. A metastasis afterwards occupied the right knee and left elbow successively, to which parts leeches were applied, in number amounting to 55.—Petechiæ, or vibices, at last arose over the right shin bone, and a sloughy patch on the buttocks, with pimples.

She became greatly exhausted, and after seventeen days' severe suffering, died on the 24th of January last.

The antiphlogistic treatment had been rigidly pursued, but it does not appear necessary to detail it.

A late eminent physician of this town died of gangrenous erysipelas, which commenced with violent pain in his leg, without any known external cause. And a no less indefatigable surgeon fell a victim to erratic erysipelas, which returned upon him periodically. I might adduce other instances, but these will suffice to shew the existence of a morbid diathesis, which can evolve itself into action without any external provocation.

If I might judge from my own experience, I should infer that the inhabitants of these towns were physically and geographically liable to erysipelas.

MORBID SUSCEPTIBILITY FORMED BOTH MENTALLY AND CORPOREALLY.

A pre-disposition to disease may be formed by mental affections—as anger, fright, disappointment, want of rest, continued anxiety, long watching, &c. The late Dr. Gregory used to mention, in his lectures, the case of a lady, in whom a paroxysm of ague, to which she had been subject, recurred, in consequence of her being frightened by a rat.

A suppression of the Catamenia *(Amenorrhœa)* and of other accustomed discharges, may also dispose the body to irritation. Some females are subject to attacks of erysipelas about this period. Chills after violent and forcible exercise, cold water drank when the

body is heated, moisture after long drought, and sudden cold after long heat, are other circumstances supposed to engender a morbid diathesis; but, above all, are the materials which disturb the digestive and visceral functions, such as crude and unwholesome victuals, spices, fat, &c.

Different people are affected differently by eating muscles and crabs. I once suffered a violent attack of urticaria from eating muscles, with great disorder of the stomach and head. After an emetic, milk is the antidote. I knew a gentleman, now deceased, one of my most worthy friends, who relished lobsters, to whom a spoonful of crab, in sauce or otherwise, would prove, at any time, poisonous.

Cold fruits, as cucumbers, melons, onions, garlick, bitter almonds, valerian, and camphor, when swallowed, produce urticaria or nettle-rash, in some people. Spirits will sometimes do the same, and mercury occasionally excite erethismus in persons, to whom it is a real poison.

Mr. Pearson, in his valuable observations on certain articles of the *Materia Medica*, page 167, observes—"There is a susceptibility of the skin peculiar to certain individuals; in consequence of which, mercurial preparations, whether applied to the surface of

the body, or taken into the stomach, produce an eruption, which is commonly attended with more or less indisposition of the general system." I have known a person salivated by one grain of calomel, and others whose constitutions could not be affected by mercury.

We know that impure air, bad food, and poor clothing, will engender scrofula in children, who had no hereditary tendency to this disease.*

Certain substances eaten as food very much dispose the body to inflammation and mortification. The Ergot, or Cockspur Rye, produces the dry gangrene in man, quadrupeds, and fowls, which have eaten of it.†

It may be feared that bad wheat can produce a similar morbid disposition. During the prevalence of diarrhæa amongst the soldiers of the South Devon Militia, in the year 1815, in this garrison, a young man called Bolt, æt. 26, was brought into the hospital with extensive

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* See Lectures on Diet and Regimen, by Dr. Willich, 1800.

† See a Dissertation on the Effects of the Secale Cornutum, or Ergot, 8vo. London, 1813, by O. Prescott —Also Journal des Scavans, 1616.

Articles Ergot and Ignis Sacer, in Rees's Cyclopædia.

Noel in Memoir. de l'Academ. des Sciences, 1710.

Dubamel in ibid, 1748.

Larrey, Memoires des Chirurgie Militaire, tom. 3.—p. 141. sur la Gangrene traumatique.

sloughing of the perinæum, occasioned, no doubt, by the food he had eaten, and probably by the unwholesome bread, furnished by the contractors, as complaints were made against it. The urethra was perfect, and there was no extravasation of urine. The man recovered under a free use of bark and wine.

I often remarked that the granulations would become flabby and pale, whenever diarrhæa recurred, during the process of healing; and it was curious to observe the action of the acceleratores urinæ muscles in the act of micturition.

Barley mixed with raphanus may contribute to a similar disposition. Salted flesh meats, without vegetables, produce scurvy. It is remarked in *Anson's Voyages*, that ulcers, which had healed, broke out afresh from bad nourishment.

The juice of the Papaw tree is well known to have a powerful effect in decomposing the fibrine of the blood, and the flesh of both living and dead animals.*

There is no doubt that particular sorts of vegetables, not yet perhaps described, will very much disorder herbivorous animals.—The disease called "*Murrain*" in cattle is probably produced by some irritating herbage,

* Wernerian Transactions, vol. 3. p. 246.

as they first shew blisters on the tongue, followed by fever, erysipelas, and gangrene, with an emphysematous state of the skin over the loins and other parts.

The people of these towns live a great deal on fish, especially in the hot months, when this commodity cannot be well carried away.

The mechanics of the Dock-yard eat the poorer sorts of fish, animal food sparingly, and vegetables *ad sufficiendum*. Many of them also live in confined situations.

I merely draw attention to these circumstances in order to shew how the human constitution may be varied, by diet as well as by air, at certain seasons of the year, and disposed at one time to take on irritation from causes, which do not affect it at another.

It has been proved by Butters, that in February, when his fingers were mashed, and the bones broken, there was no propensity in his constitution at that time to irritation, of which it became readily susceptible in the following August, when his infirm nail was merely raised, and fever excited, which scarcely spared his life.

The same sorts of accidents have been constantly occurring in our Dock-yard, and were noticed previously in the very persons fatally affected, without producing such consequences, because their constitutions were

not equally prone to excitement at all times. So that I believe the constitutional propensity may exist prior to action, without any local manifestation, and that an erysipelatous or irritative fever is often excited by external injuries, which, in many instances, have not been discovered, and in others never suspected. Hence SAUVAGES properly explained the two Principia Morborum in the following words—"Causa est, illud ex quo intelligitur alterius actualis existentia, unde discrepat a principio, ex quo non actualitas sed tantum possibilitas intelligitur."*

SOURCES OF MORBID SUSCEPTIBILITY.

This morbid pre-disposition, which may be either congenite or acquired, has been referred to various sources by different authors—to the state of the blood by some, to bile by others, and to a mixture of both, or even to certain humours. GALEN considered that the yellow bile produced *exquisite erysipelas*; blood and bile, *phlegmonoid erysipelas*; excess of blood, *erysipelatous phlegmon*; lymph and phlegm, *œdematoid erysipelas*; black bile, *schirroid erysipelas*.†

DESAULT‡ also spoke of *bilious* erysipelas, as well as phlegmonous and local.

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* Nosologia Methodica, 8vo.—1763.

† Opera omnia, 1609.

‡ Œuvres Chirurgicales par Bichat, tom. 2.

Larrey* simply speaks of the spontaneous or constitutional, and of the traumatic or local erysipelas.

Richter† and Pinel‡ have ascribed it to gastric irritation.

Mr Abernethy§ refers the pre-disposition to *general irritability*, dependant on disorder of the chylopoietic viscera.

But to whatever sources we attribute these susceptibilities, whether to blood, bile, gastric disorder, derangement of the primæ viæ, to a morbid diathesis, to idyosyncracies, to debility, to a bad habit of habit, to humours, or to any other pathological condition, it is only sufficient for our present enquiry to admit the fact of such pre-disposition.

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* Memoires de Chirurgie Militaire.

See also Dionis Cours d'Operations de Chirurgie, 1733, and O'Halloran's Treatise on Gangrene and Sphacelus, 8vo. London, 1755, chap. 8. wherein he speaks of injuries resulting from venesection.

Traité des Maladies Chirurgicales, par M. le Baron Boyer : Paris, 1824. tom. 2. p. 7.

Study of Medicine by John Mason Good, M. D. F. R S. 1822. London. Vol. 2. p. 609 to 644.

† Anfangsgründe der Wundarzneykunst, b. 1. p. 252.—Gött. 1799.

‡ Nosographie Philosophie, 5th edit. 1813. tom. 2. p. 85. Erysipèle compliquèe avec les fièvres gastrique, adynamique, ataxique, etc.

§ On the constitutional origin and treatment of local diseases.

WANT OF MORBID SUSCEPTIBILITY EXEMPLIFIED.

This dormant but easily excitable pre-disposition, which I have been considering, may be not only ignited and rendered apparent in many persons by the most superficial injuries, but the total want of it in others, who are healthy, is equally obvious.

Formerly it was supposed that the bullets, which were projected by gunpowder through a man's body, contained some deleterious substance—hence the term "*poisoned bullets.*" But the fact is, these notions are now abandoned, as modern surgeons totally disregard the idea of poison, and consider gunshot wounds merely as punctures with the highest degree of contusion, from which sloughing almost invariably follows. But some men may be shot all over their limbs, through the abdominal viscera, the lungs, and other important organs, and yet survive, whereas another person may die from the prick of a pin or a needle.

Many people are now living with shot quietly sacculated in different parts of their bodies, in whom there is no disposition whatever to excitation from their presence.

Pins and needles, which have been swallowed, generally travel about the body without engendering any constitutional irritation,

and the pins come out with their heads off; but in such instances there can be no disposition to irritation.

The Guinea worm, or Malis Dracunculus, (*Lin:*) which works its way out at the feet, legs, and arms, is supposed to be swallowed in the form of larvæ, with the water drank at the Cape, Coast of Guinea, &c. to be hatched in the body, and to travel from the stomach to the surface.

The action, excited by its presence in the surrounding parts, is generally that of progressive absorption in an ordinary degree, but in some irritable constitutions it occasionally produces alarming symptoms.*

In Anasarca we witness a great distension of the cellular membrane of the lower extremities, with serous fluids. An erysipelatous affection, with vesications, is not uncommon in these cases; in general the bladders may be opened, and the water evacuated without detriment; but death has been known to occur from slight scarifications.

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* See Dr. Chisholm's account of it in the Edinburgh Medical and Surgical Journal, 1815.

It may be doubted whether or not the larvæ are swallowed or hatched in the skin; but this inquiry is not connected with the present subject, as I am considering the different actions of the same bodies in different habits, with the existence or non-existence of morbid susceptibility.

When the lungs have been wounded, and air is effused into the cellular tissue, we sometimes see a frightful distension of the skin; but there is very little danger, in a sound habit of body, from emphysema.

Urine, or bile, escaped from their proper receptacles, and effused into the cellular substance, excite sloughy inflammation in almost every habit of body, I believe; but matter may be secreted in cysts, formed by the condensation of cellular substance, and confined to a part, although a diffuse inflammation will sometimes extend itself from the circumscribed cavity of an abscess.

I have perhaps dwelt under the head of causes longer than I was expected to have done, but the subject appeared to require illustration:—"*Vere scire est per causas scire;*" or in the language of that great philosopher Bacon, "Knowledge is power, for whilst ignorant of causes we can produce no effects."

I have said quite enough, I think, to prove that this disease was not occasioned in any instance by poison; and that both its action and fatality entirely depended on the constitutions of the patients, who had been previously debilitated, in all probability, and thereby rendered susceptible of irritation, which they would have formerly resisted.

There could have been nothing remarkable in the appearance of one or two such cases at any other time or place; for although the disease shewed a peculiar malignancy of character, yet the most remarkable circumstance appertaining to its history was, that so many instances occurred epidemically within a given time, and ceased afterwards; for, as a sage correspondent justly remarks, "formerly it would have been thought that some malignant planet was vertical at Devonport;" but this part of the history is perfectly reconcileable with the progress of other diseases.

A question may arise, if strength or debility most certainly conduces to the formation of this morbid susceptibility.

Were the men stronger or weaker than usual at this period, is the question? There certainly was no instance of preternatural strength.

We have every reason to believe that weak bodies are more disposed than strong to irritation, which is particularly shewn about the termination of fever, when crossness is construed into a sign of ammendment; and that generally speaking, women are more excitable than men. Strength implies proportionate health; but weakness, which is the sequel of many diseases, though no actual disease in itself, evinces some failure or error in the

animal functions. A feeling of preternatural strength may be as morbid as a feeling of excessive weakness.

Now as we find the human body at one time susceptible of fever from local irritation, which it can resist at another from a similar provocation; and as we have reason to think that weakness, rather than strength, favours susceptibility, it was right to consider the various changes conducive to either state.

We might not have precisely discerned the specific agents, which disposed each patient to disease, but we certainly must have enumerated the leading circumstances tending to create and develope such a morbid propensity.

I cannot conclude this part of the enquiry with greater satisfaction to myself, than by inserting the valuable letter of Mr. ABERNETHY, whose admirable opinions I have taken every possible opportunity to disseminate, in the manner they were first implanted in my mind; satisfied, after fifteen years' experience, that the good of mankind will be promoted in proportion to the extent of their diffusion; and that those persons, who have never had the peculiar advantage of attending his scientific lectures, can form no adequate estimate of the talents, the erudition, and the practical information displayed in

them, nor of the truth and integrity which characterise the actions of this eminently distinguished surgeon, philosopher, and friend.

"*Bedford-Row, London,*
2d April, 1825.

"Dear Sir,

"I have known numerous cases of mechanical injuries causing very severe disturbance of the system, and even death, in consequence of the morbid pre-dispositions of the party affected.

"Even pricks from clean sewing needles have occasioned peculiar inflammation of the absorbing vessels, and consequent violent febrile action and nervous irritation.

"I remember a young lady, residing in the house of a medical man, who some days after having pricked her finger, had irritation commencing in the wounded part, transmitted along the absorbents to the axilla, which was accompanied with great acceleration of the pulse, alienation of mind, and convulsions, so that her life was despaired of. The pulp of bread poultice was applied to the inflamed parts, the bowels were cleared and kept gently lax. Alterative doses of Calomel and Blue Pill, effervescing Saline Draughts, and Infus: Menth: Sulphuric: were the only medicines employed.

"The inflammation and general disturbance subsided, and in a week the patient seemed to be well; but three days afterwards, the bowels becoming disordered, inflammation in the absorbents recurred, and the constitution was again disturbed in the same manner, though in a less degree. This second attack was soon tranquillised by the same measures which had been adopted on the former occasion.

"I have no doubt that *general irritability* is the predisponent cause of inflammation in the absorbent vessels, and that it gives a character to the inflammation which takes place.

"That the inflammation induced is of a peculiar character, and excites a correspondent disturbance of the system in general, may be inferred from our often meeting with cases of inflammation of the absorbing vessels and their glands, in which the general health is not affected in the same manner as in these peculiar cases.

"That the inflammation induced in these cases of the kind which I term irritative and capable of exciting the same disease in contiguous parts is observable in various instances.

"I knew a gentleman who, having grazed his heel, irritated the tender surface

by travelling all night in his boots, and produced inflammation and sloughing of the injured part, with inflammation of the absorbents on the back of the leg as high as the ham, and on the groin, causing also swelling and tenderness of the inguinal glands. Large patches of mortification took place on the inflamed skin on the back of the leg, and on the inner part of it, extending even above the knee, and the patient died.

"This young man was disordered in his stomach and bowels before he undertook the journey, and afterwards when the inflammation occurred, had violent fever, restlessness, wandering, delirium, and subsultus of the muscles.

"I have also known several cases of slight mechanical injuries, such as I am convinced would not have produced the same effects in other persons, occasioning suppuration, ulceration, sloughing, and abscesses, in contiguous parts, attended with great disturbance of the functions of the sanguiferous and nervous systems, and of the chylopoietic viscera.

"With respect to the wounds made in dissection, we are warranted to suppose that the matter applied is stimulating, because it often produces fretful sores, and because we know that the absorption of animal matter,

in a state of putrefaction, produces a most pestilential fever. Yet very rarely do we find that the matter applied acts as a morbific poison, contaminating the system, and inducing remote morbid affections, as it does in the cases of transplantation of teeth, sucking of children, &c.

"Therefore I am led to conclude, that the effects of these wounds also very much depend upon the morbid pre-dispositions of the party affected.

"I do not think there is reason to believe, in general, that the animal matter which may be on the instrument inflicting the wound, acts as a morbific poison.

"Though I have had inflammation of the absorbents, shivering, and fever, perhaps a hundred times, I never had peculiar disease locally or generally, but once. Yet I think there is reason to believe, that putrid matter produces a more than ordinary degree of fever in such cases. I have seen numbers of instances in which the local irritation, occasioned by the wound, affected the sinewy parts of the finger; and numbers, where these were unaffected, and the disease seemed only to extend through the medium of the nerves and absorbents. When much nervous irritation and febrile affection is induced, it increases all the morbid propensities of the

system, and rouses into a state of activity, dormant local affections, which re-acting upon the health in general, aggravate the malady.

"Thus I have known persons die after such illness, apparently from affections of the bowels, brain, and lungs.

"With respect to blood-letting, I may add that I do not think we are warranted to bleed in cases of irritative inflammation and fever, because these maladies are indicative of weakness, and likely to induce as a consequence a greatly augmented debility.

"I have thus, my dear Sir, put together what, I believe, I told you before, and what I have been accustomed to say on these subjects in my lectures.

"I have endeavoured to be brief, and perhaps it may be thought '*brevis esse laboro obscurus fio.*'

"I am, dear Sir,

"Your's, very sincerely,

"JOHN ABERNETHY.

"Dr. Butter."

SYMPTOMS AND DIAGNOSIS.

The discrimination of one disease from another, by some expressive and unequivocal term, is highly important in practice; but our nomenclature ought only to arise from a decided and well-marked difference of symptoms. The disease before us has not as yet received any specific appellation, by which its nature can be characterised, although it has been assimilated with many.

"A local habitation" it soon acquired, but its baptism has never been confirmed. In no one instance did it occur spontaneously as an idiopathic disease; it was always preceded by a local injury, which generally became the focus of diseased action. It availed little what that local injury was, for excitement of the different systems, viz. the nervous, the absorbent, and the sanguiferous, followed.

I believe I have fully shewn that these local injuries were of the simplest kind, and devoid of any specific virus, and that the consequent pyrexia was identified in every instance. It was, without an exception, ushered in by chilliness or shivering, succeeded by a quick pulse, increased heat, disordered functions, nausea, sickness, fainting, and diminution of strength. The constitution being disturbed by a local excitement brought out a fixation of general disorder.

The question is, ought we to call this disease Erysipelas or Erythema, or a mixture of the two, because we have alluded to both? Might we speak of erythematous erysipelas? Was it a new and a peculiar disease, or was it kindred to any other malady heretofore described?

Authors have enumerated similar symptoms in their descriptions of both erysipelas and erythema, yet it was neither the one nor the other, generally speaking, if we adhere to strict nosological distinctions.

It was decidedly erysipelas œdematodes in Lobb; erysipelas phlegmonodes in Cowle, Henwood, Walkie, and Reeves; it might have been called erysipelas gangrenosum in Horne, Taylor, and Quick; erysipelas erraticum in Rawlings; and erythema in Nichols, Butters, Long, and Beer.

But the question is, what ought we to call this disease? I would beg to simplify all local distinctions, and to arrange the symptoms under one and the same denomination.

Fever.—Febrile disturbance was the first evidence of the constitution sympathising with the local injury, and the word "fever" ought to be retained. But fever may be of many kinds, and therefore some diagnostic epithet should clearly distinguish it.

Erysipelas is a word very expressive of a certain pathological condition, signifying a

spreading and diffuse inflammation, which draws the surrounding textures into a participation with the most slight local irritation. The term "erysipelatous" would denote the radiation of disease through the skin and subjacent substances, from cell to cell, by continuity of texture, as in HENWOOD; but it is not the character of genuine erysipelas, either to produce the gangrenous patches recognised in HORNE, nor the wandering redness in RAWLING; and I do not know why, unless custom sanctions the ubiquity of the term, we generally associate the combination of pyrexia, cutaneous redness, swelling, and vesications, which last were altogether wanting in many instances, as necessary to constitute erysipelatous fever.* With respect to this fever, it seemed to commence generally as synochus, and to terminate as typhus, though the manner in which it affected the sensorium was not similar in every instance. One good lesson may be learnt from a recital of the cases, that fever is not so often idiopathic as may be imagined, and that local irritation more frequently calls it into action. It was not at first suspected to arise from local excitement, either in Professor DEASE, Dr. BELL, in BEER, QUICK, LONG, TAYLOR,

* See Hoffman de Febre Erysipelaceâ.

or BUTTERS; but in all these patients it was ultimately proved to have been the case.

But perhaps I ought cursorily to revert to the symptoms.

Rigors.—Chilliness or shivering, with languor and lassitude, generally preceded the pyrexia. There is no doubt that a rigor is produced by a temporary excess of blood in one part, and a proportionate deficiency in another. In a rigor the vascular trunks about the venous sinuses of the heart, lungs, liver, and brain, are gorged with blood; whilst the pallidity of the skin shews a deficiency of blood on the surface, from which it has been compressed by a temporary spasm or a spastic stricture of the minute capillary arteries.—Whosoever has suffered from, or attended properly to, the cold stage of an ague, must be well acquainted with this morbid change.

Instances of death during a violent rigor have been known and congestion of blood in the great vascular trunks afterwards demonstrated. But this congestive state cannot last long, a re-action, as it is called, must ensue, in order to restore the balance of the circulation; and the violence of this reaction is generally proportionate to the severity of the rigors.—A consideration of this primary condition in fever has led practitioners of late to employ in their vocabulary the term "*con-*

gestive," and to speak of "*congestive fever,*" as though they meant some precise and distinct species, whereas there is no fever without congestion, and if any fever can bear that appellation better than another, it is an intermittent, or the cold fit of ague.

Redness.—Fever may supervene on a local injury, and yet exhibit no local manifestation of redness. A transitory blush appeared in RAWLING. and quickly flew off. In other patients the redness varied from a pale red to a dark livid colour, like mahogany, sometimes seen in lines, and at others in patches. In COWLE it soon appeared, whilst in WALKIE it required time. It was not recognised in Professor DEASE until the 6th or 7th day, when it led to a discovery of the exciting cause of his fever; but this experienced practitioner even then doubted the connection, after Dr. COLLES had demonstrated it to him; yet no redness appeared in Dr. BELL, because he died before the 6th day. And it was so evanescent in the woman bitten by a rat, that when I requested Mr. DRYDEN to see the patient with me, the redness had entirely vanished, and the internal organs were more seriously affected. Therefore I think that neither the term "*erysipelatous,*" which literally means creeping, nor "*erythematous,*" denoting a florid patch, at all expresses the character of the redness,

which was in HORNE fixed and intense, in RAWLING remote and transitory, in NICHOLS generally diffused, and in the Doctor altogether wanting; for though these words designate much in some, they signify nothing in other instances.

Gangrene.—The tendency of this disease was to run into gangrene at the parts primarily injured, or previously occupied by redness. Incipient mortification was witnessed in BEER, LONG, QUICK, TAYLOR, RAWLING, HORNE, BATE, HENWOOD, and others. Sloughs also of the cellular membrane, which appeared like "*tanned leather*," were seen in HORNE and HENWOOD. These evidences of local death, viz. sloughing and gangrene, pointed out the putrid diathesis in the subjects so affected; but still we could not with propriety call this a "*putrid*" fever, because it might occur without putrescency. And yet I consider that this circumstance, with the very offensive effluvia exhaled from their bodies, shewed a certain condition, favourable both to local and general death.

Secretions—Considerable derangement was also observed in the stomach and bowels.—Nausea was a frequent symptom, and the visceral secretions were much vitiated; whilst those from the skin were equally morbid and uncertain—for sometimes it would be dry and

flushed, at others profuse perspiration would ensue.—The tongue generally kept moist, but was loaded at its base.

Pain.—The morbid sensations in the diseased parts were so much raised above the natural feeling, that the pain is said to have been most exquisite in many instances. Sensation can only be heightened to a certain pitch, ere intense pain must be converted into its total absence, characteristic of local death. Reeves complained of most acute pain. Dr. Pett, of Clapton, who died from a dissection wound, is said to have remarked that he never before knew what pain was.* Head-ache is also described as being very intense in many instances, with fever and delirium, whilst in others, after the first invasion of fever, when it was principally felt, the pain in the head became alleviated.

Irritability.—Another feature in the symptomatology, and not the least important one, was the irritability of the patients. Their natural tempers became ruffled, they were irascible, and almost disrespectful at times. This morbid but excusable irritability shewed a proportionate disturbance of the nervous sys-

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* Sir A. Cooper also mentions, in his lectures, the death of Dr. Ludlow, of Calne, from the prick of a thorn when shooting; and the pain which he suffered was most severe.

tem and brain, and these organs were excited before the absorbent or sanguiferous vessels took on any decided action.

Hiccough.—A spasmodic affection of the diaphragm was the frequent precursor of death; but I do not know that we can draw any useful deductions from a recital of this symptom, beyond the mere matter of fact, which, I think, deserves notice,

Faintness.—A disposition to faint, and a sinking sensation at the præcordia, were other symptoms worthy of remark.

Blood.—The appearances of the blood varied.—The crassamentum was firm, buffed, and cupped in some instances, but of loose texture without any inflammatory crust in others. This did not reveal much respecting the disease.

Pulse.—The sanguiferous system was also hurried, for there is no fever without an increased action of the heart and arteries.—But I do not know that the pulse at all characterized this peculiar malady.—If the pulsations were frequent their frequency certainly increased after the loss of blood. A frequency of pulse, which one person ascribes to inflammation, another will call that of irritation.—In hectic fever, depending on pulmonary ulceration, the pulse is seldom under 100, and frequently rises to 130 or 140 strokes in a

minute. In intermittent fever the pulse, during the absence of a paroxysm, sometimes will not beat 60, but during the hot fit may exceed 140 strokes in a minute. It is the full and strong, not the frequent pulse, which characterises the inflammation of certain organs, whereas in peritonitis the pulse is thready, small, and wiry, as well as frequent, like a piece of whip-cord under the finger.—Therefore, frequency alone may denote irritation, as well as inflammation.

Inflammation.—This word, used practically, may convey a very wrong notion of the disease, and lead to errors most fatal in their consequences. The mere term "*inflammation*" pre-supposes a practice, and induces us to direct means against its progress—hence we say "*antiphlogistic*" measures. Now all redness does not indicate inflammation. A bashful girl blushes, is this inflammation? A frequent pulse does not indicate it, for frequency may be synonimous with weakness, dependant on irritability of mind, and in many instances, contra-indicative of inflammation. Rigors and flushings, alternately recurring, shew a want of balance in the circulation, and the loss of equilibrium in the sanguiferous system; but they do not denote, for instance in ague, inflammatory action. There may be states of the body as different from inflammation as darkness from light. Gangrene

is the reverse of it, and yet we talk of gangrenous inflammation.*

I think the term "*inflammation*" objectionable, in giving a name to this disease, unless we can imply an uncertain or diffuse redness, with most violent pain, and then erythema might suffice. Furthermore, genuine inflammation, excited by a local provocation, is confined usually to a spot, and condensed into the formation of an abscess, (*phlegmon*); it is neither so transitory in its nature, nor so flashy in its marsh, as this disease—it is more persevering and steady—it does not leap from part to part, and produce local death—nor does it cease for a time, and recur—nor quit one part without detriment, and set upon another—reciprocally killing and healing.

Inflammation in general has a defined margin—this had none.† It sometimes ran by

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* See Morgagni de Causis et Sedibus Morborum, lib. 3. Epistol. 25. arti. 9.

Also, Pearson's Principles of Surgery, p. 114, &c.

† The reader will find these distinctions, with respect to the disposition of inflammation either to limit or to spread itself, more fully and nosologically laid down in the table annexed to a work on inflammation, by Mr. James, Surgeon to the Exeter Hospital, 8vo. p. 328. London, 1821.

I am almost ashamed publicly to confess that I never read this work until I had nearly completed my enquiries on this subject, otherwise I might have availed myself of some useful matter contained in it, when I formed the arrangement of external irritants.

continuity of texture through the absorbent vessels and glands, or radiated through the cells of membranes, equally towards the trunk and extremities; whilst at others it leaped from finger to shoulder, without any intermediate or obvious token, from right to left, and from flank to centre. Sometimes it had a fancy to attack successively the bowels, the lungs, or the brain, and to quit them for some part of the extremities, whilst at others it would pass over these organs altogether unnoticed. I would call it a capricious and a rambling disease. These fancies are not illustrative of pure inflammation. Therefore the term "*inflammatory*" would be very improper to couple with a fever of this anomalous type, as it pre-supposes a theory, and prejudges a questionable line of practice.

If then we cannot generally employ the words erysipelatous, erythematous, putrid, or inflammatory, what other epithets should we seek?

Irritation.—The action of any stimulus applied to a part might be called "*irritation;*" but this action may be of two kinds, 1st simple, 2d specific. With the latter, which refers to smallpox and other specific diseases, we have nothing now to do. When fever follows such simple local excitement as that produced by clean needles, we have reason always to ap-

prehend an unhealthy state of the patient's constitution; but whether this depends on *debility*, *general irritabilily*, or a peculiar morbid diathesis, we cannot exactly say. It will be sufficient for our purpose to comprehend the nature, and to understand the effect, of irritation.

I purpose, therefore, to couple the adjective term, "*irritative*," which has been adopted by others, as expressive of constitutional disturbance excited by mechanical injuries, devoid of specific virus, and to call the disease, which occurred amongst the artificers in our naval yard, "*Irritative Fever*."

MORBID ANATOMY.

The examination of dead bodies has been found so frequently the means of saving the living, that every individual of the community is bound, by the duty which he owes towards his fellow creatures, to assent to such a proposition, whenever gravely made by a medical man, who risks his life, as these pages woefully shew, in the acquirement of this valuable information. Doubts must sometimes arise respecting the seats, causes, and consequences of obscure diseases, and these doubts can only be removed by the subsequent investigation of the dead. When life is concerned, reason should supersede prejudice, and we ought neither to dissemble nor cloak our ignorance.

Of the twelve men who died, only four were examined after death by Mr. Dryden, and the morbid appearances in them, with trifling exception, were such as might have been expected. In the limbs there was a great distension of the cellular membrane by sero-perulent fluids ill-mixed, and by sloughs; whilst on the surface gangrene was evident.—An intolerable fætor also emanated from the bodies, which ran into rapid decomposition, disengaging ammoniacal gases.

In the abdomen of Bate, Nichols, and Walkie there was a remarkable blackening or lividity about the junction of the ileum and cæcum, and a coloring of the peritoneum illustrative of previous congestion. In the stomach of Bate there was discovered a reddish patch near the pyloric orifice.—Around the kidnies of Bate and Nichols a collection of matter had formed; in the former it was the product of disease, whilst in the latter, as we have already surmised, it was chronic.—The lungs generally escaped, but the left lobe in Bate was deeply hepatized and gangrenous. Evidences also existed that the venous sinuses of the brain had been gorged with blood, from the cerebral excitement seen in Walkie and others, but in this organ we could only expect to discover the sequelæ of congestion, and not any sign demonstrative of organic

derangement. Such appearances might have been *à priori* anticipated, but we ought to be very cautious what conclusions we draw from these premises, either in forming our prognosis or in planning our treatment.

PROGNOSIS.

In adopting an opinion respecting the ultimate termination of irritative fever, we must be guided by the following circumstances.

1. By the previous condition of the patients health.

2. By the degree of nervous excitement present.

3. The violence of fever and of pain.

4. Presence or absence of delirium and coma.

5. The wandering of the disease, its tendency to gangrene, or its disposition to retrocede from the surface, and to attack vital organs.

Delirium however is an uncertain guide, for LOBB who had been highly delirious recovered; BATE also, and yet died with all his faculties about him; whereas HORNE never returned a rational answer for thirty hours preceding his death. The disposition to wander and slough I regard as the most formidable character of this disease. Hiccough, and a sinking at the præcordia, were other foreboding symptoms.

TREATMENT.

I might have contented myself with accounting for the appearance of this malady, or with explaining its causes, and not have gone farther; but as all medical enquiries relate to the cure of diseases, according to Celsus, "*Quia non intersit, quid morbum faciat, sed quid tollat;** and as high authorities are not equally agreed about the treatment of irritative fever, I shall be excused, I hope, if I venture to make a few remarks on this very important and unsettled subject. And if I cannot lay down a certain and infallible method of treating it, I may be allowed to point out some obvious beacons as warnings, and to shew the treatment which has not heretofore proved successful. I therefore propose to arrange this part of the subject under the two following heads:—

1. *Local.*
2. *General.*

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* Celsus Præfat. lib. 1. p. 10.

The local treatment will comprise the different forms of lotions, fomentations, poultices, dressings, bandages, incisions, &c.

Cold Lotions.—I think that cold water, which is the basis of all washes, as a menstruum, holding in solution various salts, such as the superacetate of lead, sulphate of zinc, the muriate or acetate of ammonia, &c. with or without alcohol, camphor, vinegar, &c. is a very questionable application in the treatment of a wandering and desultory disease. Some people disbelieve in metastasis, but numerous instances are recorded on the best authorities, of patients who had plunged their hands into cold water, because it afforded temporary relief to this sort of painful redness, and who had afterwards suffered either sloughing of the parts affected, or paralysis of the body.

Nichols attributed the commencement of his attack, especially of the shivering, to the use of a cold lotion, not that such was *ipso facto* the case, but cold and moisture certainly keep up evaporation and become repellants, in the language of old authors, by chilling the parts. We may, however, question their sedative properties, but we know that cold, which is the principle of their action, applied to the feet of a person subjected to tender bowels, will sometimes bring on an attack of inflam-

mation on these viscera. We do not in general recommend cold applications, either in gout, rheumatism, or erysipelas, and why should we risk them in the redness of irritative fever? A superficial disease on the skin can do no harm; there it might be allowed to expend itself without any hazard of a transfer to an internal or vital organ. Besides the risk of repelling it, we keep back by cold the necessary actions for healing an ulcer. I am therefore not disposed to recommend cold lotions to injured parts exciting irritative fever.

Fomentations.—These are made with decoctions of emollient vegetables, as poppy-heads, chamomile-flowers, hemlock, elder, marsh-mallows, &c.—They are generally applied between the temperatures of 60° and 100°; but their soothing effects may be attributed both to the warmth of the water, and to the properties of the vegetable matter held in solution.

Cataplasms.—Poultices are perpetual fomentations. Some are made simply with bread and hot water, which form a nice and soothing application; others are composed of boiled roots, as carrots, turnips, parsnips, &c. Oatmeal, first boiled in water, and then fermented with yeast, or stale beer grounds, is also a good application for gangrenous parts; or linseed meal, mixed with Port wine, has

been of late highly recommended. The addition of fresh lard, or sweet oil, may be sometimes necessary, to prevent cracking.—All poultices ought to be soothing of their kind, calculated to allay local irritation, and sometimes to promote the digestion of wounds.

Dressings.—These are of various kinds.—Rancid fats, or stimulating resins, might be likely to kindle and increase local irritation. Ointments, cerates, and plaisters, which have been shop-ridden and stale, are very objectionable applications on this account.—There can be but one object in applying sticking plaister, and that is to unite a wound immediately; but in cases of mechanical injuries exciting constitutional disturbance, as in bruises, abrasions, punctures, and lacerations, salves and dressings are not generally recommendable. They serve however to cover a breach of surface, whilst the constitution generates a new integument, and some of them stimulate the vessels to form a more rapid union.

Bandages.—These give great support to parts disposed to swell and relax, but their effect is entirely mechanical and must be regulated by circumstances, depending on the discretion and judgment of the medical man. Rest also, in the horizontal position, will materially aid the intention of bandages, by pre-

venting a gravitation of fluids in diseased parts. Thus many ulcers may be healed, which would spread from exercise.

Turpentine.—The rectified oil of turpentine, which is distilled from the common concrete juice of the Pinus larix, was much used in ancient surgery for washing recent wounds, either punctured or incised, but since the doctrine of adhesion by the first intention, as it is called, has been brought into use, and one of the greatest improvements it is certainly in modern surgery, the use of the oil of turpentine has been altogether laid aside.—I believe, however, that it might be still applied with greater advantage than sticking plaister to some recent punctures; and indeed it has been lately recommended as a prophylactic measure for guarding against the ill consequences of dissection wounds, by Dr. Colles,* who proposes that a bottle of it should be kept in the dissecting-room.

A solution of camphor, which is also a concrete essential oil, in turpentine, is an old panacea for punctures and cuts. The combination is stimulating, antiseptic, and detergent. To gangrenous patches, after incisions, turpentine applied to the quick may expedite the separation of the dead parts. This was our

* Dublin Hospital Reports, vol. 3. p.

reason for employing it in Reeves's case, after incision.

In puerperal fever, with a typhoid or putrid tendency, its use has been highly extolled by Doctors Bremmen, Douglas, and other able practitioners in Dublin, both internally, in the dose of 3 drachms, and externally; and if in this condition of the body it can be beneficially applied to some patients, it may be also used for others having a putrid tendency, and not labouring under puerperal fever.

With respect to its dose, I may mention that at one period it was given in a few drops, but now we prescribe it from 1 to 2 ounces, in cases of tinea. This shews how little we know of the posological or prosodial parts of medicine.

In the accidents from fire, which, by the bye, produces appearances analogous to erysipelas, viz. vesications, redness, swelling, and fever, ushered in by shivering; when the heated body amounts to 150°, 200°, or upwards, experience has shewn that the external application of turpentine, warmed and mixed with resinous cerate, in the form of a liniment, is preferable to any other, aided by wine, spices, and opium, given internally. The comparison of this plan, tried by Dr. Kentish,*

* See Kentish's Essay on Burns, 8vo. London, 1817.

in the Newcastle Collieries, with that of the old system of applying cold washes, ice, lime-water and linseed-oil, &c. shews that a great number of patients may be saved by the former scientific plan of treatment, who would have died from the latter. I do not pretend to determine precisely the cases for its use, as there is no laying down mathematical rules for the practice of medicine; but I only mean that, in certain conditions of the body we might bear in mind the proofs which we have ourselves seen, and the evidences which have been furnished by our forefathers, respecting the antiseptic virtues of turpentine. But on no account would I recommend the application of this essential oil, after incision, above once or twice in any case whatever.

Balsam Copaibæ.—This resinous juice will be also found a useful application to sloughy or indolent sores.—I have seen it very rapidly expedite the healing of old fistulæ, after they had been laid open, and other sluggish ulcerations.

Incisions.—This point of practice, which is described by Celsus in the following words, "*Quidquid aridum est, et intentione quadam proximum quoque locum male habet, usque sanum corpus concidere,*"* and was introduced

* Lib. 5. p. 196.

with great success into the Royal Naval Hospital at Deal, by Dr. C. HUTCHISON,* merits our commendation. It is particularly advisable in that state of skin called "*brawny*," and seen in carbuncle, boil, and in the modification of erysipelas denominated phlegmonodes, of which we have given a good example in REEVES.†

I need not recapitulate the circumstances calling for incision, as every practitioner must see its object, where he wishes to relieve tension, and to evacuate offending materials. It is delightful to think how much good surgery can effect in such a case; for by laying open the thickened integuments freely and properly at first, and exposing the nidus of all the misery, we may prevent that engorgement of the cellular substance, which has been compared to a "*quagmire*" by Mr. PEARSON, and called "*boggy*" by JOHN BELL,‡ Dr. DUNCAN,§ and Mr. LIZARS. We outwardly invite materials, which, pent up, produce a deadly operation on the patient.—Nature cannot relieve herself in such a case;

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* I beg leave to refer the reader to his Practical Observations in Surgery, 1816.

† See case 11.

‡ Principles of Surgery.

§ Medico-Chirurgical Transactions of Edinburgh, vol. 1.

in her operations generally, she exhibits design and contrivance for relief, but in this disease she seems absolutely to consolidate and strengthen the barriers which encompass disease; and unless this overstretched skin be divided, either with a knife or a hot iron, which last is also recommended by CELSUS, thus—"*Nihil melius est quam protinus adurere*,"* and still preferred by the French surgeons, the disease will spread up the limb, and overwhelm the senses with its rapid and destructive march.†

The science of medicine is here inseparable from the art of surgery, they must go side by side, for the mind which directs the hand of the operator, ought clearly to comprehend the principles of general treatment; proving that whatever subdivisions we make in the practice of the medical profession, for the more minute cultivation and greater perfection

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* Lib. 5—28.

† When I was in Paris, in the year 1817, I was one day more than usually amused with the *sang froid* of the venerable Baron Larrey, who kindly invited me to his "*Conference*" on every Thursday morning, at the Hôpital Militaire. In one of the wards I observed a number of irons, of different sizes and shapes, heated in the fire, and could not imagine for what purpose they were designed; at last the Baron, coming to a patient with an enormous lumbar abscess, and calling for a particular iron, said, "*Voyez, Monsieur le Docteur Anglois*,"

of any one branch,* yet that every physician ought to have proved himself at least a good surgeon. How otherwise can he be looked to in unravelling any obscure disease, or in directing an operation which he has never performed?

I have much satisfaction in adding Dr. HUTCHISON's valuable letter to this part of my subject, shewing his confirmation of the practice of incision recommended by himself *ten* years ago, and I embrace the present opportunity of thanking him for his additional information on this important subject.

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and then standing off like a fencing-master, surrounded by his levée, with a grace and dexterity seldom surpassed, thrust the heated instrument into this enormous collection of matter, searing the edges around, and widening the aperture, whilst the contents were gushing out, and frizzing, until a gallon at least was drawn off, which ended with the fainting of the patient, and the following pathetic exclamation from the sturdy Baron—"*Pauvre garcon.*" Several other irons were used for chronic ulcers and tumours.—I merely mention the circumstance to shew the different practice of the two countries, and that the French surgeons still follow ancient usages, by preferring a heated iron to the knife.

* The subdivision of labour, and the advantages resulting therefrom, are most fully discussed by Adam Smith, in his "Wealth of Nations."

"*Royal Naval Arsenal, Sheerness,*
15th March, 1825.

"Dear Sir,

"I have seldom known fever and death to follow local injuries, excepting where a predisposition exists, and which pre-disposition being aided by certain peculiar states of the atmosphere—for in some situations I have observed the slightest scratch, immediately over a bone for instance, degenerate into the most malignant ulcer, or into what has been called *Hospital Gangrene;* and I have several times seen erysipelas, in its worst shape, produced on the hands or arms of cooks, by a prick or scratch of the finger from the bone of a hare,

"I have seen other people suffering from wounds contracted in dissection, and also from constitutional disturbance to a very considerable extent, even such as to occasion death.

"I cannot adduce any facts bearing upon the question of poison, and therefore can give no decided opinion upon it; but I should think that the absorption of a morbific substance was totally out of the question.

"The treatment, however, that I have seen to answer best has been depletion in every shape, divided doses of tartarised Antimony, as recommended by DESAULT; fomentations, and sometimes evaporating lotions to

the inflamed parts, have been useful. In many such cases, which have come under my observation, the attending inflammation has appeared to be more allied to erysipelas erraticum than to any other, although it is somewhat different; and as this species of inflammation spreads, I have observed the line of demarcation between the diseased and sound adjacent skin, to be the darkest of any part inflamed, and the colour that of a *dusky or brick red;* and I perfectly recollect one instance, which was in the person of an intelligent surgeon in London, where a blister applied completely round the arm, so as to encircle it, some little distance above the described line of demarcation, that stopped, or seemed to stop, the progress of the disease—for the inflammation did not extend above the blister, and the patient recovered.

"After *ten* years experience since the publication of my remarks, I cannot furnish any additional instructions for the treatment of erysipelas phlegmonodes besides incision, which, I am convinced, is the best practice in this formidable disease, both as regards my own experience, and that of every other surgeon who has pursued it.*

* This practice is more fully detailed in a valuable work published by Dr. HUTCHISON, entitled, "Practical Observations in Surgery, 8vo. London, 1816.—J. B.

"I have never found Bark *(Cinchona)* of any service except in that species of erysipelas styled *Erysipelas Erraticum*, and not always then. Since I have been employed at this Dock-yard, I have never seen any of the consequences you allude to as having recently occurred at Plymouth yard, and my colleague, Mr. JAMES BROWN, says, that during the period of a year that he has performed the duties of his office here, he has not even *once* seen any bad consequences to result from wounds, bruises, or other accidents; and my friend, Dr. DUNN, of Woolwich yard, during the twelve or fourteen years he has been the principal surgeon of that arsenal, states, that although he has been, and continues to be, very much plagued with ulcers, erysipelas in any shape has not been a prevailing complaint, after such wounds as are now under consideration.

"I have the honor to be,

"Dear Sir,

"Your very obedient humble servant,

"A. COPLAND HUTCHISON.

"Dr. BUTTER, Plymouth."

I have also learnt from my friend Dr. JONES, now surgeon of the Plymouth naval yard, who was for two years and half the predecessor of Dr. HUTCHISON, at Sheerness, that erysipelas phlegmonodes was never recognised there during his residence.

Scarification.—Before I quit this part of the subject, I ought however to mention, that scarifications, or slight incisions, are recommended for dilating those small wounds and punctures, inflicted either with the teeth of animals, or with the instruments used in dissection. Even if such wounds have healed, and the constitution is disturbed by them, it would be right to convert the parts into open ulcers. After an incision, such caustic as the Argentum Nitratum, or Potassa Fusa, may be employed for this purpose, with a view of destroying the vitality of the part affected. It is a practice, however, which must be regulated by our view of the case. If, as I have supposed, in the majority of these instances irritative fever arose because patients were out of health at the time, and prone to suffer from the slightest injury, the re-application of external irritants might increase febrile disorder; but if, on the other hand, we act under the impression of a poison lodged in the part, we should feel no hesitation in altering its condition by some powerful substance. At all

events, I believe it will be an advisable and safe practice, generally, to make an incision into an injured part, either to relieve tension, or to evacuate any offensive matter.

Oil.—As a prophylactic against the morbid sequences of punctures, &c. oil is recommended for the purpose of anointing the hands, previous to their immmersion in animal fluids. This may be a reason why so few butchers suffer constitutional irritation after wounds, because their hands are constantly besmeared with fat, or soaked in water, during their bloody occupations. Oil too is recommended for the bite of a viper, which is said to generate at once its own poison and antidote—for the fat is taken out of the reptile's body, melted into an oil, and preserved, by those country Æsculapii, who repose great faith, perhaps deservedly, in its use, and profess to cure animals bitten by vipers. I remember one horse, whose life was saved by frictions with oil, and by internal stimuli, after the bite of a viper.

Salt.—The common muriate of soda, used at our tables for culinary purposes, and employed for taking recent stains of blood out of a floor, is another very old remedy for wounds, supposed to be inflicted by poisoned weapons. After sucking and washing the injured part freely for some time, the appli-

cation of salt was supposed by Celsus to bring out the sanies. He recommends a salted fish to be bound over the wound made by a dog. "*Sal quoque his præcipueque ei, quod canis fecit, medicamentum est, si manus vulneri imponitur, superque id duobus digitis verberatur: exsaniat enim. Ac salsamentum quoque recte super id vulnus deligatur.**— Cupping and the actual cautery have been also recommended.

Ligature.—When a swelling and redness spread up a limb towards the body, from a dissection wound, or the bite of an animal, binding the intermediate parts firmly with a ligature is supposed to prevent the disease. Dr. Duncan, junr. has recorded an instance of its efficacy in his *Essay on Diffuse Inflammation*, already alluded to, and published in the *Medico-Chirurgical Transactions of Edinburgh*, vol. I. But I have lately seen a case of injury from an adz wound over the inner condyle of the left femur, where the swelling and redness spread downwards to the ankle and foot, and did not extend itself towards the body in the same degree, proving that a ligature would have augmented rather than checked the disease. However, the subject of ligature may remain for future consideration.

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* Lib. 5.—199.

But all these topical measures must be questionable applications after local injuries, affording doubtful and equivocal evidences of poison, and therefore in persons whose irritable constitutions are predisposed to febrile disturbance, their use ought to be altogether laid aside, and the mildest or most soothing applications directed to the local provocation; whilst our sole and especial attention ought to be employed in the improvement of the general health, by ameliorating the secretions, and by tranquilising nervous excitement.

Blisters.—The good effects of blisters, as mentioned in the preceding letter, I have not had an oppertunity of witnessing, and therefore I can merely draw attention to their use. Whenever there has been a retrocession of disease from the surface to the interior, threatening dissolution, the use of blisters, and also the semicupium, are the most common and probable external means for affording relief.

In the general or constitutional treatment of irritative fever, we must always bear in mind, that there is an injury done to some part of the body, which injury must be repaired; and that we ought to assist, in every possible manner, the reparative powers of the constitution. We must also remember, that the redness in irritative fever closely resembles that called traumatic erysipelas, which are kindred; that it is prone to wander, to spread itself without limit, or to shift from place to place; and that, it is invariably accompanied with constitutional disturbance, or with the fever of irritation,* rather than of inflammation.

To cleanse out the stomach and bowels is the *first* consideration; to restore or rather to regulate the secretions, the *second;* and to remove nervous irritation the *third.* On the preceding indications, I need not now be particular, as the means will be found amongst the various classes of medicines, called emetics, purgatives, and sudorifics, to some of which I may hereafter particularly revert.

Whatever means can restore the balance of the circulation, and preserve healthy secretions, will allay irritability, assuage pain, and very materially fortify the powers of the animal economy; but the difficulty is in establishing and preserving these desirable functions.

* See Hunter on the Blood, 4to. p. 339.

The practice of physic is founded on observation and experience. We are thus taught the different and opposite actions of various medicinal means, and of the same means in different persons. Who would, *à priori*, have inferred, by looking at the structure of the stomach and bowels, that ipecacuanha should vomit, and rhubarb purge? We know, however, that such effects are general; but to this day we may not properly comprehend the preliminary nervous excitement so communicated to these organs. In our examinations of the dead, we trace out the ultimate ravages of disease; and, finding that there has been an undue proportion of blood sent to a given part, infer that a diminution of the circulating mass, in a similar instance, might equalize the circulation, and relieve parts overloaded; but experience alone can determine the safety of this measure, and regulate the quantity to be drawn, or the manner of abstracting it.

In our efforts to rectify disorder, we have nothing but our senses to guide us. Our profession is not yet raised to that perfection, nor does it seem to be susceptible of the precision, to which some branches of philosophy are brought by mathematical rules. Thus Dynamics is become a science, almost all of calculation; Chemistry is again a science

of experience; and Medicine will remain for a long time, in the greater number of its parts, a science wholly of observation.

In cases of life and death, we must not take any thing for granted, nor say that this method should conquer disease, and that restore health. Our conduct ought to be steered between fear and confidence, and guided by the polar star of our own observations. According to theory, we might ever pursue one mode of treatment in preference to another; but if we repeatedly fail in trying the same plan, experience cannot justify its repetition, no pathological anatomy can warrant its readoption, no authority sanction its use, and no reasoning qualify its continuance. The moment we attempt to argue in subversion of facts, we enter the mazes of a labyrinth, in which we are bewildered and beguiled at every step, without knowing how to extricate ourselves. And yet we talk of experience as synonimous with age; but experience without the closest observation, avails little—for we are merely the interpreters of Nature, and the disciples of her aberrations, studying, as it were, a science yet in its infancy.

I proceed to the consideration of certain general remedies.

BLOOD-LETTING.

1. *Venesection.*—The loss of blood, artificially induced, is one of the oldest, commonest, and most powerful remedies, with which we are acquainted. We ought not therefore to be surprised if blood be sometimes drawn, under circumstances of high excitement and alarm, without any manifest advantage. A person, who considers every unhealthy commotion of the mind or body as inflammatory, and employs his lancet accordingly, must be sometimes disappointed in affording the relief which he expected and intended, especially when the mischief arises from an excitement of the nervous system.

In the treatment of irritative fever, copious abstractions of blood may render the constitution unable to repair the injury exciting it, by robbing nature of her necessary means.—With ulcers this is sometimes seen. In practicing any general remedy extensively we ought to be prepared with the result, which we expect to follow it. Let us enquire what effects we expect from blood-letting? Bleeding *ad deliquium*, as Dr. Gregory properly

remarks,* causes dizziness, yawning, sickness, vomiting, and a temporary cessation of the heart's action; the pupils of the eyes, and the sphincters, become dilated; and both motion and sensation suspended. These are extreme consequences from the loss of blood; but there are minor effects of swooning, fainting, and diminished power, followed by increased irritability; nay, it is easy to bleed a person to death.

These conditions, artificially induced by the lancet, are sometimes necessary in order to check inflammation, especially of vital organs; but under them the march of others may be obviously expedited. And yet it seems remarkable that the effects of bleeding, carried even to *deliquium*, often seem to do neither decided good nor decided harm; but the complaint, whatever it be, runs its course.

We bleed in order to produce an effect, which effect ought to be inimical to the progress of disease, and we therefore specify a large orifice "*pleno rivo*," when it is our object to produce syncope. Many inflammatory diseases are immediately checked by

* "Magnæ vero sanguinis detractione graviores et fere perniciores effectus habent; unde vertigo, nausea, vomitus, animi defectio, et non modo cordis arteriarumque actio, sed omnis motus atque sensus interruptus."—Gregory's Conspectus Medicinæ, p. 547. 5th edit.

copious abstractions of blood promptly taken, these are indeed our chief remedy ; but there are other diseases which will run a determined and specific course, in spite of any quantity of blood, however great, which might be drawn. Inflammations of the brain, lungs, liver, and other organs, may be checked by venesection ; but small-pox, meazles, ague, gout, and erysipelas, will run a certain course, let the volume of circulating blood be either diminished or increased. Yet I do not mean to deny that venesection may not be employed with manifest advantage occasionally in the latter diseases, especially when there is a full bounding pulse, a hot skin, and other strong indications of plethora, but even here I would bleed with caution, because these diseases never occur without disorder of the general health, evincing, more or less in degree, a cachectic state of the constitution.

I sometimes smile when a person tells me that he has attempted "*to cut down a fever at first by the lancet*," (to borrow a figurative expression which ill suits the deliberate and cautious observation becoming a medical enquirer) and that after several blood-lettings it still goes on ; for the fact is, we can only conduct such patients to a happy release, by mitigating symptoms, and not cure fevers. But still a great deal of pathological acu-

men is sometimes required in order to determine on the expediency of copious blood-letting, and on the ultimate point to which it may be prudently carried; but we ought always to be satisfied that we are about to do some essential good.

If a disease has a tendency to gangrene and rapid dissolution, or to wander and spread like irritative fever, I will never be persuaded, after the body of evidence which I have collected, and the great attention which I have bestowed on it, that blood-letting can be safely trusted, although there may be circumstances indicative of its necessity; for if "*the life of all flesh be the blood thereof*," and if, as STAHL says, life be "*putredini contrarium*," then the loss of blood may ostensibly accelerate typhoid, adynamic, and putrid diseases.

Authors have set down certain states of the body, for which blood-letting is recommendable; but the fact is, that pathology is not yet so perfected as to enable us to be very explicit on this head. Dr. GREGORY* says—"*Sanguinis detractio sæpius necessaria vel utilis est in illo genere morborum qui pyrexiæ apud nosologos dicuntur, rarius in neurosibus, rarissime in cachexiis.*"

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* Page 550

But without care we might find ourselves a little fettered here by the trammels of classification; and I take this opportunity to observe, that much as I admire the ingenuity displayed by divers nosologists, in their classifications, yet their artificial and arbitrary arrangements of diseases do not always afford lucid views of the natural distinctions or connections, subsisting between varieties of the same groupe or family; and that although they may lead to a more ready and accurate diagnosis, yet that pharmaceutical knowledge has not been proportionally extended by them.

In the disease under consideration, there were the symptoms of pyrexiæ, of neuroses, and of cachexiæ, of all three classes combined; and, therefore, highly as I revere the departed genius of Dr. Gregory, I think that his views were moulded to the Cullenian system, and fashioned by scholastic restraint.

At the commencement of irritative fever, when the head is greatly affected, especially in a plethoric person, I might be disposed to advise the loss of some blood, either from a vein or topically, with the view of relieving the system, as Mr. Hunter supposed, "*mechanically;*" but this principle of acting differs from that of a person who would say—"Sir, this is an inflammatory disease, and bleeding is the remedy."

In the practice of physic, we can readily see what does good; but not so easily the things which do equivocal harm.

A remedy is the means of stopping or removing a disease. Bleeding, regarded in that light, is no remedy, if it can neither arrest nor rectify morbid actions. On the contrary, the loss of any considerable quantity of blood may be pernicious, and opposite to the intentions of nature, when she has been roused for the reparation of an injured part. There is the same difference between a remedy and a poison, as there is between virtue and vice :—

> "Our virtues would be proud, if our vices whipped them not; and our crimes would despair, if they were not cherished by our virtues."*

A poison may be converted into a remedy, as vice may prove an incentive to virtue : for instance, arsenic will cure an ague, to which bleeding had done harm. If bleeding weakens a patient and does not make a decided impression on his disease, then it becomes hurtful, by diminishing the strength without subduing the malady.

Our best guide, experience, has proved that blood-letting is no remedy for irritative fever. We should not be justified, therefore,

*All's well.—Act 4.—Scene 3.

in recommending it in the manner in which it was practised, should a similiar series of cases to those already recorded recur at any future period; for *two* out of the *three* patients who recovered, were *not* blooded, and twelve died out of *thirteen* who lost blood; and although the cases of recovery were not the least alarming of the whole; yet we cannot suppose that their diseases would have terminated thus favourably had a larger quantity of blood been abstracted.

Venesection made no effectual check to the disease, in any one instance, but still afforded delusive hopes with some patients. If the loss of blood be considered as the means of curing an illness, it certainly did not acquire that credit here. Yet I must say that this result was ascertained only by experience—for there existed many symptoms which seemed to call for active depletion. It would be unreasonable to suppose that venesection had not received a fair trial in one out of all the cases, that it was ill suited as to time and quantity in every instance—for certainly it was begun soon enough, and carried to a sufficient extent in Walkie and others; and had blood-letting been the opponent of this disease, recovery ought to have superseded death. Only one patient (Butters) survived out of twelve patients, who were blooded, and there is no

evidence to shew that his life was saved by venesection; and one of the most violent attacks, which occurred in LOBB, was subdued by the efforts of his own constitution, without blood-letting, excepting the quantity drawn by thirty-six leeches.

When the constitution has been for some time endeavouring to heal an ulcer, and at last rouses itself into a state of excitement therefrom; or when fever quickly springs up after the receipt of an injury, as in HORNE, ought we to infer that repeated blood-lettings and continued purging, are the means for assisting the efforts of nature to heal it? If so, experience has taught us otherwise. Why do we not bleed in fevers arising from fractures, and other severe local injuries? Febrile excitement is sometimes very high after these accidents. Why is depletion prohibited in them, but because we find it necessary to add to, and not to take from, the resources of nature in such cases?

Experience has shewn that out of twenty patients, recorded in this work, (thirteen of whom were artificers of the Dock-yard) who had been blooded, whilst labouring under irritative fever, nineteen died.

I do not wish to convey an idea, however, that they might not have otherwise died, or that the urgency of their symptoms did not

justify depletion; but, from the data before me, I am certainly borne out in stating my opinion, that venesection *alone* is not the remedy for this disease.

So much for experience; next, what do authorities say upon this subject?

Dr. Colles.—In the three cases recorded by Dr. Colles, venesection was resorted to in the only instance that died, viz. Professor Dease; for though the other two were young men, and more capable of sustaining the loss, yet they suffered from such excessive debility, which, by the bye, I ought to have particularised more fully in the symptomatology of this disease, that the loss of a large quantity of blood might have robbed them of the little strength spared at the last. Yet Dr. Colles has not expressed himself so decidedly as we could have wished, from the weight attached to his opinion, for or against blood-letting, and we must be therefore contented with this commentary on the cases furnished by him.

Dr. Duncan.—In speaking of the treatment most proper for diffuse inflammation of the cellular substance, Dr. Duncan, junr. says,—"Thus we see, that in the treatment of this disease, very opposite means have been employed, and both appear to have been occasionally successful, and both have failed. But their salutary effects

depend upon different principles. In general, by the antiphlogistic treatment, we are enabled so to lessen the existing inflammatory state, that the system is capable of recruiting and performing the office of restoration to health; but, on the other hand, by the free exhibition of diffusible stimuli, we seem, in some instances, to impart to the system such a degree of preternatural energy, as to resist and extinguish their diseased action, after which health is again restored by gradually abstracting the cause of the artificial and salutary excitement. In some cases, however, we are perplexed by opposite indications, when an extreme degree of debility requiring cordials, exists along with intense inflammation, which can be conquered only by further depletion. In these cases we must have recource to the alternate, or even simultaneous, employment of the most opposite remedies. During the prevalence of the Brunonian doctrine, it was considered, both by its proselytes and opponents, to be quite unscientific to employ at the same time antiphlogistic and stimulating means. But this precept proceeded upon a very partial and limited view of the subject, for it is evident, that venesection, for example, and alcohol, are by no means strictly antagonist powers, and that in many cases it may be advantageous at the same

time to diminish the quantity of circulating fluid, and to excite the living solid to greater action.*"

Mr. Abernethy.—The opinion of this very experienced anatomist and close observer of facts, is decidedly averse to general blood-letting, in cases of irritative fever, produced by local excitement. And certainly his opinion, which has ever received the fullest weight in all countries, is confirmed by the sequel of that combined experience, which I have endeavoured to bring into a focus in these pages. I beg leave to refer the reader to his admirable letter, (p. 203.)

Sir Astley Cooper.—In the letter, (p. 158) which I have had the gratification to acknowledge from this most distinguished surgeon, shews that he generally recommends the anti-phlogistic treatment in irritative fever; and that, although he sometimes advises the application of leeches, yet he never once hints at general blood-letting. His expression is, when speaking of his own illness, "*Medicine did not cure me, I recovered by going into the country.*" We are therefore entitled to conclude, that Sir ASTLEY COOPER does not advise

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* Medico-Chirurgical Transactions of Edinburgh,—Vol. 1. There is a very able and impartial review of the above work in JOHNSON'S Medical Journal for April, 1825.

venesection, but directs his object towards the restoration of the secretions in irritative fever.

Mr. Shaw.—My attention was drawn just in time to a most useful and interesting paper, published in the *London Medical and Physical Journal* for May, 1825, p. 369 to 379, by Mr. JOHN SHAW,* Lecturer on Anatomy, in Great Windmill-street, London, on wounds received during dissection. Mr. SHAW has had numerous opportunities of observing the bad effects of wounds inflicted during dissection, in this school. He has wounded himself many hundred times, but only twice suffered constitutional excitement. His opinion is, that irritative fever may arise either from the absorption of putrid matter, or of the morbid secretions from inflamed serous membranes in bodies recently opened. He has known two instances, where irritative fever was mistaken for rheumatism. As prophylactics, Mr. SHAW recommends sucking the wound, washing it clean, and then dipping the part into laudanum and goulard. Caustic, he thinks, increases the irritation

In this school the bodies are injected with a solution of nitre and bay salt, which seems to prevent infection. When fever arises he di-

* This gentleman is the author of a useful little work entitled "A Manual of Anatomy."—pp. 443.—Lond. 1822.

rects laudanum and porter to be drank, and good living. This plan has succeeded in his own case, and that of others. He objects to bleeding most decidedly, and doubts even if leeches are ever necessary in irritative fever. The reader will find many additional and valuable remarks on this subject in the journal alluded to.

Baron Boyer.—This celebrated professor who recommends bleeding in erysipelas, to which I have considered irritative fever allied, says that it will be hurtful when this disease wanders, or inclines to gangrene.—"La saignée seroit surtout nuisible dans l'erysipèle qui est compliqué avec une fièvre putride ou maligne, et qui a une tendance marquée vers la gangrène, ainsi que dans l'erysipèle *ambulant*. Dans le premier cás, elle ne manqueroit pas d'aggraver la maladie et de favoriser la gangrène, en diminuant les forces vitales déja trés affoiblies; dans le second, elle pourroit donner lieu à une metastase fâcheuse vers l'interieur."*

Mr. Pott.—"This kind of inflammation," says Pott," "(I mean the erysipelatous) generally makes its attack with nausea, vomiting, slight rigors, heat, thirst and restlessness. The quickness of pulse and heat of

* Boyer Traite des Maladies Chirurgicales, tom. 2. p. 18.

skin are indications for some degree of evacuation, and indeed sometimes render it requisite, but it is a very prevailing opinion with many practitioners, that these evacuations should be freely made, and frequently repeated; in short, that the cure of this kind of inflammation is safely to be effected by them, which is so far from being true, that the practice has proved fatal to many. If, for instance, blood be drawn off in such quantities as that the patient's pulse sinks suddenly, or if his strength be considerably reduced by purging, it is no very uncommon thing for the inflammation so to leave the part first affected, and for such complaints to come on immediately, as soon prove destructive, and afford no opportunity to repair the mischief which the evacuation has produced."*

Dr. Willan.—This able physician who rendered himself justly celebrated for his clear and practical arrangement and delineations of cutaneous diseases, and who evinced the greatest caution in his recommendation of any plan of treatment, makes the following remarks:—"All the ancient writers, except GALEN, recommend blood-letting as a princi-

* Pott's Surgery by Earle.—Vol. 3.—Sec. 3.—p. 57.—The whole of this section is most important to the present subject, as the practice by incision is here fully explained.

pal remedy in the treatment of erysipelas.—This practice must be evidently improper in the three forms of erysipelas last described,* and even in the erysipelas phlegmonodes, it does not always appear necessary. When the blood drawn is sizy, practitioners are often induced to bleed a second time; but we generally find, in London, that repeated bloodletting aggravates the symptoms, and protracts the disease.† In a comatose or apoplectic state, the application of leeches, or cupping-glasses, at the nape of the neck, may be advisable.‡"

I have now given the result of my information, derived both from experience and authority, on the subject of general bloodletting employed for the cure of irritative or erysipelatous fever; and although it may prove occasionally necessary in the beginning, yet, in my opinion, it will be hurtful towards its termination.

During a rigor, blood drawn from the arm may be injurious, by preventing a re-action, and by producing an irregular or an anomalous type of fever, ill formed; whereas, in the hot stage, the loss of blood may allay heat,

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* Erysipelas Ædematodes, Gangrenosum, et Erraticum.

† See Bromfield's Chir. Obs. vol. 1. p. 108.

‡ Willan on Cutaneous Diseases, 4to. p. 517.

and afford delusive evidences of amendment, adding to the debility which follows the paroxysm. In hot countries, or during the summer, when a patient's health has been much debilitated, blood-letting may not be so well borne as at a colder period.

In a very plethoric person, threatened with the rupture of a blood-vessel, during the efforts made for a violent re-action, the loss of some blood may prove a proper precautionary measure; but never, in my opinion, with the view of curing a malady, which I have proved to originate in a debilitated, cachectic, or irritable state of the body.

There is a great fashion, no doubt, in blood-letting, as there is in our living—"*Non ad rationem sed ad similitudinem vivimus, vel exemplo plusquam ratione.*"

Some physicians direct bleeding for every disorder, whilst others refrain as generally from so doing. In many fevers, which Huxham treated with bark and stimulants, the moderns employ the lancet.

A question arises—are disorders the same in 1824, as they were in 1750?

Huxham, with all his posthumous fame for talents and classical attainments, which were much above par, was yet ignorant of pathological anatomy, and neglectful of surgery. These were lamentable deficiencies in a cha-

racter, which ought to embrace the whole circle of the science. But though he can never be ranked in the class with Celsus, Morgagni, Senac, the Hunters, or Baillie, yet there is a great deal of truth, and sound reasoning in his writings, which, however, inculcate doctrines opposite to the practice of the present day. The fact is, success will be found in neither extreme, but in a medium course, drawn from experience and judgment.

Having now finished my remarks on general blood-letting, to which I have rather invited the attention of the pathologist than laid down any exact precepts, I must still leave the reader to draw his own conclusions from the data thus furnished, and to regulate his decisions by the statements which I have laid before him. But perhaps I ought to add a few words respecting topical blood-letting.*

2. *Leeches.*—The abstraction of blood from diseased parts, followed by fomentations, afford temporary relief to the tension and redness in irritative fever. This practice may be sometimes adopted when general blood-letting is inadmissible Butters was considerably relieved of an intense headache by their application, although the effects of venesection were

* On this subject the reader will find the best information in the last edition of the Dictionary of Surgery, by Samuel Cooper, &c., a work deserving a place in every medical library.

doubtful, and the woman bitten by a rat also felt relief from leeches and fomentations; yet in a similar case I wonld not recommend the former, as I am not clear that we gained a point by them in subduing her general disorder. I think that the sinking at her præcordia and the faintness was greater after their application, although the redness was removed. The French surgeons are very partial to their use, when they would not venture upon general blood-letting, in cases of erythema and erysipelas.*

We have it on evidence, and authority leads us to suppose, that the abstraction of blood by leeches may be serviceable when venesection has proved unavailing.

In conclusion, I beg to observe, that I have endeavoured to give a fair and impartial consideration to the subject of blood-letting ge-

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* In the Annales de la Medicine Physiologique, 9o. numero, Sept. 1824, p. 240, there is an interesting case of very severe "Erysipèle phlegmoneux du membre abdominale gauche, par Casimir Broussais, au Val-de-Grâce," treated by leeches. So many as 250 were applied, at six or seven times, within a few days, and the patient recovered after incision on the outer ancle. Broussais says—"Dès lors Aillone alla mieux; sa cuisse et sa jambe guérirent parfaitement, mais on ne put empêcher la formation d'un petit depôt vers la malleole externe; on l'ouvrit, et dès lors la fièvre, qui avait été très opiniâtre, commenca de tomber, la gastrite disparut, l'appétit se fit sentir."

nerally and topically; I have furnished considerable evidence from local experience, and paid every deference to authorities; I have divested my mind of all theoretical prejudice, and adhered to facts; and, although I have not condemned the abstraction of blood in irritative fever *in toto*, under certain circumstances, yet I have pointed out the nullity of this practice, carried beyond a prudent and a reasonable extent. I have thus, I think, satisfactorily shewn, both from experience and authority, that excessive depletion fails to arrest that fever, which is excited by ulcers and wounds of various kinds, and which is called irritative; and that the want of blood may be found out towards its termination, when immense demands are made on the system, by the breaking down of the cellular tissue, loss of skin, and copious discharges, flowing from the diffusion of this disease through the cellular substance, and stripping the skin from the subjacent muscles.

I propose next to consider some of the most powerful medicines, usually ordered in cases of fever.

MERCURY.

Quicksilver, reduced into a state of oxyde by trituration, with conserve of roses, forming blue pill, or with lard, constituting blue ointment; or dissolved by acids, and formed

into salts by the processes of sublimation or precipitation, has been found a remedy most serviceable for curing many diseases, and an antidote for others. Chronic or indolent ulcers, of a specific kind, are often improved and healed by an internal or external use of mercury; inflamed parts, depositing lymph, are so altered by the mercurial influence, that the morbid actions are destroyed, and the effusion of lymph arrested.*—But there are other pathological conditions disturbed by mercury: irritative and sloughing diseases are rather increased by it; indeed the mercurial disease, described by MATTHIAS,† is of a sloughing nature. Erethimus, or itching and redness of the skin, called also eczema, mercurial leprosy or erythema, are other morbid products of this mineral,‡ with irritative fever.

I have known a single grain of calomel salivate a child, and doses under 20 grs. adults.—I have also heard of sailors who had been "hove down," *aliàs* salivated, 8 or 9 times over for a disease, and not cured afterwards.

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* See Saunders, by Farre, on the eye, 8vo. London, 1820.

† On the Mercurial Disease, 8vo. London, 1810.

Also Alley on the Hydragyria, 4to. London, 1810.

‡ Pearson's Observations on certain articles of the Materia-Medica, London, 1807. p. 148.

This may be fairly called in the language of a modern author "a barbarous practice, the inconsistency, folly, and injury of which no words can sufficiently describe."*

The preparations of mercury can only be given with one of two intentions:

1st. As a stimulus to the stomach and bowels, with the view of purging;

2d. As the means of rectifying morbid secretions, by diffusing its influence generally throughout the system.

The submuriate of mercury, combined with jalap, forms an excellent purgative medicine in certain derangements of the primæ viæ.

Mild and unirritating doses, as proposed by Mr. Abernethy,† may also exert a salutary influence, but some thin persons with delicate bowels, lined with very little mucus, cannot bear the mildest doses of mercury in any shape. Some are teased and griped by it, whilst others may be maddened by large quantities. Carried beyond a certain quantity, it becomes an absolute poison with many

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* A small work containing many discreet remarks on the use and abuse of mercury, has been lately put into my hands, entitled Observations on Disorders of the Stomach and Liver, by Thomas Graham, M. D.—London. Callow & Wilson, 1824. See p. 180.

† On the Constitutional Origin and Treatment of local Diseases.

people, occasioning pain and tormina of the bowels, with sinking at the præcordia, anxiety, frequent sighing, subsultus tendinum, trembling of the limbs, ptyalism, and a small irregular pulse.*

By an excess of mercury, the mucus membrane of the fauces can be made to ulcerate, the salivary secretions will be copiously increased, and the villous coat of the bowels eroded, casting off bloody excretions.—Mercury may even produce the very symptoms for which it has been considered a specific,† when carried to an excess.

If, therefore, we expect any good from mercury in the treatment of irritative fever, it must be either as a purgative or a gentle alterative, in the mildest doses, cautiously prepared, and guardedly administered, and not by pouring in repeated doses of calomel in 10 grs. each, into empty bowels, devoid of any contents capable of sheathing the acrimony of this powerfully deleterious mineral.

Because mercury was found very beneficial in correcting many morbid pre-dispositions, and in rectifying diseased actions, particu-

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* Observations on the use and abuse of mercury, by James Hamilton, Junr. M. D. Professor of Midwifery. Edinburgh, 1819.

† See Travers on Iritis, in Surgical Essays, published by Sir Astley Cooper and himself, p. 103. et sequent. 5th edit.

larly of the liver,* it ought not to be used on all occasions incautiously; it may do much good or much harm; its qualities are not inert; therefore I must condemn that indiscriminate practice, observed by some families who keep medicine chests, of giving young and delicate children doses of calomel the moment any thing wrong ails them, especially if their glandular system be imbued with a scrophulous taint, or at all susceptible of excitement.

There is a fashion with mercury as there is with bleeding. One person calls every disorder inflammatory, and advises blood-letting; another considers every pain hepatic, and prescribes mercury; a third looks to the bowels, and directs purging; whilst a fourth may be too fond of Bark. But the fact is, if a man wishes to practice with success, he must not be attached exclusively to any one practice, but endeavour to discover the merits and salutary application of each.

ANTIMONY.

The combinations of antimony with hartshorn shavings, imitating James's powder, or with the supertartrate of potass, constituting that most active medicine, called *tartar*

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* See a most valuable work on the "Morbid Anatomy of the Liver, by J. R. Farre, M. D. &c."

Also Blackall on Dropsies, 8vo. 1818. p. 70.

emetic, have been also recommended for the treatment of erysipelas and other fevers.—Their primary action is on the stomach, their secondary on the skin. DESAULT, the celebrated French surgeon, spoke most highly in favour of tartar emetic for the cure of bilious erysipelas.*

My own experience fully coincides with this opinion, having found that moderate doses, largely diluted, form the best emetics and sudorifics; or that a small dose combined with a convenient purgative, assists its operation on the bowels. Nauseating diseases are also powerful auxiliaries in arresting the progress of inflammation, particularly of the eye.

In the treatment of irritative fever, we may therefore expect some good from tartar emetic, judiciously administered at the onset. But I believe that there may be states in which this medicine would be improper and injurious; for instance, in a protracted stage of fever, where there is great loss of power, much exhaustion, colliquative sweats, when the system is drained by discharges of matter, and sunk by a typhoid or putrid disease. It seems to me that its use may be most decided and beneficial at the commencement of fever, either as an emetic or sudorific.

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* Œuvres Chirurgicales, par Bichat.

EMETICS AND PURGATIVES.

Much good may be occasionally expected from these sorts of medicines, at the commencement of erysipelatous or irritative fever; but their use must ever be discretionary with the medical adviser—for I have already stated, that there is no laying down general rules applicable to every particular case, and in this fever, even with a gastric disorder, I should be very cautious about directing an emetic. It makes all the difference whether the stomach in health be oppressed by crude materials, or affected sympathetically by an injury inflicted on the surface of the body; the one admits of immediate relief, but the other will be varied by the nature of the exciting cause.

I think, also, that we may purge some patients too much, as well as others too little, under the idea that constitutional disturbance may be kept up by the lodgment of any fæces in the bowels; but this idea is often so far from being correct, that I have known accumulations in the bowels occur for weeks without exciting a symptom of fever.

The most extraordinary case which I have ever known occurred lately in a lady, who lived twenty-eight days without a passage through her bowels; yet there was no fever, nor particular excitement, to the day of her

death. The reflection on this case may be useful to the present enquiry, inasmuch as it shews that we ought not to be worrying and teasing the bowels too much in cases of high constitutional irritation; but rather attend to the quality of the discharges, and to the means of tranquillising inordinate actions.*

I believe that I have now drawn attention to the principal circumstances constituting the basis of the anti-phlogistic treatment; and if I have led practitioners to think on the *rationale* of this subject, I shall have attained my object in putting these remarks together.

I proceed next to the consideration of other means.

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* The reader may consult Hamilton on Purgative Medicines, 8vo. Edinburgh, 1805, with advantage; but particularly Mr. Abernethy's works ou the constitutional origin and treatment of local Diseases.

Mr. Hey, in his practical Observations on Surgery, 2d ed. London, 1810. p. 508. has recorded one case of a female, in whose bowels three plum-stones had lodged for the space of six years. He has also detailed two other instances, without specifying the nature of the concretions, or the time of their lodgment; and given references to a work on Surgery, published by the late Mr. Charles White, F. R. S. and surgeon, at Manchester; and also to a paper by Dr. Fothergill, in the 4th vol. of the Medical Observations and Enquiries.

BARK.

There are two stages in irritative fever, in which, it seems to me, that an internal use of bark may prove very beneficial:

1st. When an ulcer does not cicatrise or heal, in a proper manner, we may generally infer that there is a languid or debilitated state either of the part, or of the constitution, or perhaps of both. I speak here relatively, because the actions of a part may be either above or under par, as shewn by Mr. HUNTER;* but, I mean, that in the latter state bark, with rest and good living, will often effect a reparation. The cinchona will not only expedite the healing of an ulcer in the leg, when the actions are weak, but also in the eye. Mr. SAUNDERS† first pointed out its utility in a sloughy state of the cornea. According to this ingenious author, when the "ulcerated groove appeared on the cornea, the cinchona was began;" and in another

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* Mr. Hunter says—"I have seen many cases, where the power has been so weak, that the wound, after tapping, has not united by the first intention, nor has even acquired the adhesive state of inflammation, and has admitted water to pass through it from the abdomen for several weeks, without the periteneal inflammation being excited."—On the Blood, p. 232.

† See his posthumous Treatise on Diseases of the Eye, edited by Dr. Farre. London, 1816. p. 97, et sequent.

case, (p. 88) he says—"the improvement was remarkable and decisive."

At the *Plymouth Eye Infirmary* we have tried the bark in a great number of instances, not only in cases of sloughing of the cornea, but also for those burrowing ulcerations which take place in strumous habits of body, and quickly perforate the laminæ into the anterior chamber, leaving the eye to burst and to sink, with a prolapsus iridis, if the process be not arrested by bark, to which we sometimes join small portions of the oxymuriate of mercury, an unchemical mixture certainly, but a very salutary one. I mean that by bark we can often stop a diseased process, which would be accelerated by the loss of blood.

2dly. In that compound process of a breaking down of the cellular substance, with a secretion of ill-formed fluids, as in erysipelas phlegmonodes, owing to the transmission of local irritation through the parts, after incisions, the bark will be found the best constitutional remedy. Then is the time to "throw it in," as the older surgeons would say; but the truth never lies in the extreme, for we ought not to "shovel in" bark, but merely to give it in that form, and in those doses, which best accord with the stomach, and exert a salutary influence over the dis-

ease. I think that, during a rapid waste of the body, either from colliquative sweats, profuse discharges of matter, or incipient death of any part, bark is the medicine on which I would principally rely.

Pott says—"The powers and virtues of Peruvian bark are known to almost every practitioner in physic and surgery. Among the many cases in which its merit is particularly and justly celebrated, are the distempers called gangrene and mortification. Its general power of stopping the one, and resisting the other, have made no inconsiderable addition to the success of the Chirurgic art."*

There are other states again in which it would prove injurious; for instance, if the tongue be dry or cracked, the skin hot or parched, the sensorium greatly disturbed, the breathing difficult, or cough exist, it might be used either with benefit or harm for the same patient. If bark be given during a rigor or the hot stage of fever, it would produce a baneful effect, but a time does come after a paroxysm when the habit settles down, and that is the time, in my opinion, for beginning the bark. I am now speaking of a medicine which has been highly approved of by some of the first medical and surgical authorities,

* Pott's Surgery, vol. 3.—p. 331.

in the treatment of erysipelas and irritative fever, as the following quotations will sufficiently shew.

Boyer says—"Lorsque l'érysipèle est accompagné de symptômes qui font craindre la gangrène, tels que la couleur livide de la partie, sa mollesse pâteuse, son peu de sensibilite, la petitesse du pouls, la prostration des forces, un délire léger, la fuliginosité des dents et de la langue, les soubre-sauts des tendons. etc., il faut avoir recours aux moyens les plus propres á relever les forces vitales. Ainsi, le bon vin, les potions comphrées, les pilules de même nature, et surtout le quinquina en substance, ou sa forte decoction acidulée avec l'acide sulfurique, seront administrés avec avantage."*

Mr. Hunter, whose accuracy has stood the test of experience, said that "Bark is to be looked upon as a strengthener or regulator of the system and an antispasmodic, both of which destroy irritation; the bark and gentle bleedings, when the pulse begins to rise, are the best treatment that I know of in inflammations that arise either from accidents or operations; one lessens the volume of the blood and increased animal powers at the time, which makes the circulation more

* Boyer Chirurg. tom 2.—p. 19.

free; so that the heart labours less, and simple circulation goes on more freely; the other gives to the blood that which makes it less irritating, makes the blood vessels do their proper offices, and gives to the nerves their proper sensations, which take off the fever."*

That Mr. HUNTER had a high opinion of bark (Cinchona) I think is very clear, and that one cannot quote a better authority is equally obvious.—He again says, "Bark is of singular service in every inflammation attended with weakness, and therefore should be oftener given than is commonly done."†

Even CULLEN, who rigidly inculcated the antiphlogistic doctrines, thought that the Peruvian bark might be necessary when erysipelas was a symptom of putrid fever.‡

"In the treatment of erysipelas gangræno-sum," says Dr. WILLAN, "a free use of the bark is necessary throughout. The mineral acids and opium, in moderate doses, are likewise of great utility."§

Other writers, as WELLS,‖ PEARSON,¶

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* On the Blood, p. 565.

† Ibid p. 348.

‡ First Lines, vol. 1.—p. 379.

§ Willan on Cutaneous Diseases.—p. 420.

‖ Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge. London. Vol. 2.—p. 213, &c.

¶ Pearson's Principles of Surgery. 1808. p. 213.

Garthshore,* and Dr. George Fordyce,† have also recommended Cinchona in this particular disease.

A species of erysipelas, or irritative inflammation, with fever, is sometimes seen in children, terminating in a manner that might lead us to employ the lancet.

Dr. Underwood remarks—"Upon examining several bodies after death, the contents of the belly have frequently been found glued together, and the surface covered with inflammatory exudation, exactly similar to that found in women who have died of puerperal fever."—(p. 36.) "Infants have not only come into the world with several hard and sub-livid inflammatory patches, and ichorous vesications, about the belly and thighs, but with other spots already actually in a state of mortification."—(p. 37.) "It is," then he continues, "now several years since I proposed making a trial of the bark, to which sometimes a little Confectio Aromatica has been added, from which period several have recovered."—(p. 37.) "From the good effects attending these means, particularly on a very copious use of the bark, there is further room to hope, that we may yet be more suc-

* Medical Communications, vol. 2.—p. 35.

† Elements of the Practice of Physic, 3d ed. 1771. p. 308.

cessful in the treatment of this formidable disease."*—(p. 38.)

The application of medicines to the cure of disease has not been cultivated with that nicety with which their component parts have been determined by chemical analysis.

In speaking of bark, we mean the genus Cinchona, of which there are three distinct species used in medicine, with numberless varieties,† viz.

1. Lancifolia, or pale,
2. Cordifolia, or yellow,
3. Oblongifolia, or red bark.

And yet each species is considered as a stimulant, tonic, antispasmodic, and febrifuge, and prescribed accordingly, although the virtues of each bark must depend on the manner in which it has been preserved or dried. We order them in powder, decoction, infusion, tincture, syrup, and extract, to be taken in new milk or Port wine, sometimes with opium, spices, &c. Of these barks I have generally preferred the pale, or lancifolia. The cordifolia and oblongifolia may be equally efficacious, but their comparative

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* A Treatise on the Diseases of Children, by M. Underwood, M. D. 1819. 7th Ed. vol. 1.

† Humboldt's Personal Narrative, translated by Miss Williams.—Vol. 3.—1818.

virtues have never been medicinally stated, and therefore I have no hesitation in recommending that from which I have witnessed good effects. Bark, boiled and acidulated with the sulphuric, nitric, or muriatic acids, often acts favourably on the stomach of debilitated patients. A macerated solution of bark, with the peelings of Seville oranges, snake-root, saffron, and cochineal, in spirits of wine, commonly called "Huxham's Tincture," is also a very valuable medicine.

In the practice of physic we have no direct evidence of the pathological condition, which should lead us to prefer one species to another, of which there are so many varieties, although Chemistry has shewn that great differences exist in the constituent elements of each.—Their virtues have been ascribed to their alkaline bases, to which the names of Cinchonine and Quinine have been applied, the former abounding principally in the pale bark, and the latter in the yellow. According to analysis, the red bark, which contains the greatest proportions of Cinchonine and Quinine, is the strongest, but it is more apt to excite vomiting;* and, therefore, I have preferred the pale. The sulphate of Quinine, prepared by a very expensive process of boiling

* See Rigby on red Peruvian Bark, 8vo. London. 1783.

yellow bark in alcohol, and subsequently extracting the alkaline base, by means of sulphuric acid largely diluted, and which in its appearance resembles benzoic acid, has been lately recommended as a substitute for bark, of which it may be considered the essence.

But excepting the trials made by Dr. Elliotson,* in St. Thomas's Hospital, London, and by Dr. Dickson,† late of Clifton, but now the intelligent and able physician of the Royal Naval Hospital, Plymouth, on his own children, we have not much authentic evidence in our own country‡ to guide us for prescribing or trusting to a medicine, the action of which must be yet uncertain, as chemists are not agreed about its composition.§ The dearth of this article, viz. three guineas per ounce, or about one penny per grain in the retail, is a sufficient temptation for vending a spurious and an adulterated substance. Therefore, I think, we are not

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* Transactions of the Medical and Chirurgical Society of London.—Vol. 12.—part 2.—p. 543.

† Edinburgh Medical and Surgical Journal.—Oct. 1823.

‡ The French have preceded us in their researches and experiments on these newly-discovered substances. See Villerme Bulletin de la Societe d'Emulation. 1821. Magendie. Journal de Physiologie, Oct. 1821.

§ See a Formulary of New Remedies by R. Dunglison, M. D. with notes by T. C. Haden, Esq.—1824.

yet justified in trusting to a new medicine of this description in any case of danger, until we are more fully satisfied respecting the certainty of its operation, the purity of its composition, and the uniformity of its effect. I think it, however, a medicine highly worthy of trial, for a stomach which would not retain a drachm of bark might bear five grains of the sulphate of quinine. I am now trying it for two patients, the one a case of dyspepsia, and the other of intermittent fever, but I am not yet enabled to speak decidedly of its effects, for though the patients are getting better, good living no doubt has done as much as the medicine.

According to Dr. Paris,* two pounds of Cinchona will yield five or six drachms of the sulphate of Quinine, of which he considers eight grains equal to an ounce of bark. We should not be authorised by Dr. Elliotson's experiments to exceed the dose of five grains, even for a strong man.

I cannot quit the consideration of this medicine, to which, I believe, I owe my life, without detailing briefly the particulars of my own case, which I consider to be highly important to the present enquiry, in a double point of view; and which I ought not to withhold

* Pharmacologia.—5th edition.—1822.—Vol. 2. Art. Cinchona.

from the public if it can be made beneficial in any manner to mankind.

On the 3d of September, 1818, I walked from Plymouth some miles into the country, for the purpose of shooting, taking with me an innkeeper of this town as a marksman. The morning was sultry, tokening rain, which came on insidiously, and poured down at last heavily, so that we were both very wet for several hours.

On my return I felt more weary and stiff than usual after such exercise ; my skin got pallid, and drawn into pits, as though turpentine had been applied, resembling chicken flesh : I also felt chilly and shivered. I took some warm negus, eat a light dinner, and drank a glass or two of wine ; but still the sensation of lassitude and weariness did not leave me until the evening, when it seemed to be removed by some coffee. I retired to bed earlier than usual, and awoke about midnight very restless, hot, and thirsty, with pain in the head and back ; but towards morning, the heat was carried off by perspiration.

4th.—I pursued my ordinary avocations, still feeling a general indisposition, as though I had caught cold, with a slight cough or huskiness, confusion in my head, pain over the eye-balls and in the back, a tendency to yawn, and to sleep rather than to walk about. I took

warm diluents frequently during the day, avoiding solid food, and at night a dose of antimony, which brought on general perspiration, and I passed the night tolerably.

5th. On rising, I felt great weakness and lassitude; I could not think on any subject intently, nor pursue my usual routine. I did, however, force myself out of doors, but I was unfitted for business.

My companion in arms hearing of my indisposition, came to enquire for me, and I learnt from him the manner of his proceeding. He had felt chilled precisely as I did. On coming home, the first thing he took was a glass of gin and bitters, *(Tinct: Gentian: Comp:)*— He of course changed his wet clothes, and, it being market-day, and his house full of company, he was led by his usual habits, and by the society, to drink very largely of spirits and hot water, *aliàs* hot grog, so that he went to bed intoxicated; or, to use his own expression, he was never "*drunker in his life.*" On the following morning he arose with the usual feelings attendant on inebriety, but all his shivering was gone; and, continued he, "*I am very well at present, Sir; sorry to see you so poorly.*"

I took some broth, tea, and warm gruel at intervals, during this day, some antimony at night, and again went to bed early.

About midnight I felt excessively cold and shivered, a cough came on, with great fullness in the chest, and difficuly of breathing, and I dreaded an attack of Pneumonia.

For some time I lay under an additional quantity of bed-clothes, but could not get warm by this method; at last a burning heat ensued, which lasted for an hour or two, so that I was obliged to throw off all the blankets; a profuse perspiration came on towards morning, when I felt excessively weary and weak.

6th. Much pain in my back, and over the eye-balls, with giddiness and throbbing in the head. After breakfast I was enabled to attend to my professional duties, and thought myself better towards evening. Pulse 65. I passed the next night tolerably.

7th. I arose with a feeling of general langour, as though something was very wrong with me, and prognosticated a heavy illness.

About midnight again a violent shiver came on, which lasted for an hour, and, after two hours, finally terminated in free perspiration.

8th. I felt excessively languid and exhausted. My sight was dazzled, my eyes heavy and aching, and my head confused. I tottered, and even staggered in attempting to

walk; I was, in short, undone. The paroxysm had not quite gone off; my pulse beat 150 strokes in a minute, and strong; the pulsations could be counted in my ears, seen in the carotid arteries, and observed at the wrist without feeling. I had a cough, and difficulty in breathing, with a pain low down in the loins.

In this state I was found by two medical friends, who were prompted by the kindest motives, after hearing of my illness, in tendering their professional advice and assistance; for which I hope ever to feel and acknowledge the deepest gratitude and obligation. By their direction I lost thirty ounces of blood, which was both buffed and cupped, without fainting. Free perspiration afterwards followed. I took a dose of calomel and antimony by their direction, dozed for a few hours, and got better. I repeated the medicine, and took a cathartic, which operated powerfully.

9th. Having passed a tolerable night, I was considered better, and the amendment fairly enough attributed to the bleeding. I came down stairs, and continued easy until noon, after which a sense of lassitude and debility again came over me, with frequent yawning.

About six o'clock, P. M. A numbness in my fingers, and a loss of feeling in the skin, were the first tokens of a vehement shiver, which brought in its train the usual sequences of heat and perspiration, which had not ceased by *twelve o'clock on that night*, a space of six hours.

10th. I continued in bed, not having recovered the effects of the paroxysm on the preceding night, and endeavoured to convince my medical friends that I had certainly experienced a regular fit of ague; but, as they did not think with me, and as I felt just then too ill to decide for myself, having, besides the confusion in my head, a bursting heavy sensation seated either in the spleen or the cardiac end of the stomach, certainly fixed below the diaphragm, and increased by full inspiration: I submitted to a further loss of blood, between twenty and thirty ounces, which was also sizy; and continued the saline and antimonial medicines which were ordered.

11th. I passed another very tolerable night, and this amendment was also attributed to the loss of blood. But on the afternoon I became again weary and weak. The natural feeling began to retire from the skin and fingers, I yawned frequently, and knew not how to rouse myself.

About six o'clock, P. M. Another rigor came on, more decided and severe in degree than any I had ever experienced, followed also by heat and a long-continued exhausting sweat, from which I did not so soon recover. I had now woefully learnt that blood-letting would neither remove nor mitigate the vehemence of my malady, and that I must decide on a different course; especially as I lost strength after every paroxysm, over which the loss of blood exercised no control.

12th. I had never felt so weak as I did on this morning, nor had I ever before known common laxatives operate so violently. I kept in bed during the greater part of this day, and passed a comfortable night afterwards.

13th. I got up at noon, and ordered a boiled whiting at two o'clock, but before *one* o'clock a most tremendous shivering unexpectedly came over me, and lasted above an hour. It was followed by the usual symptoms, and a longer continued feeling of exhaustion than I had ever experienced.

This attack exceeded every former, in duration and severity, and convinced me that depletion, by increasing the weakness, favoured the approximation from the tertian to the quotidian type. The attacks at first remitted every 48 hours, then every 42, and

now only 36 hours had elapsed. I was, however, sensible enough to discover that the pulse was intermitting, and nearly imperceptible in a rigor, without any distinct stroke, the heart fluttering, and the arteries tremulous; that the pulsations would acquire distinctness, frequency, and force, as the heat came out, exceeding, perhaps, 150 strokes in a minute; and that the sweating would recur without any diaphoretic drinks whatsoever. Whatever be the sources of animal heat, it certainly is circulated with the blood.

14th. This was again an alternate day of rest, during which an amendment was experienced; pulse now only 65. The wide range of the pulse in 24 hours, convinced me of the actual necessity almost for a medical man to remain constantly with some patients, in order to discover the variation of their symptoms, and the real nature of their disease.

15th. I awoke early, and dreaded an attack at noon again on this day, almost fearing that it might come on even six hours earlier, as the former paroxysms had recurred from twelve at night, to six, P. M. and at noon for six times.

I informed my medical friends that I now meant to try the effects of bark and Port wine, Accordingly I mixed ℥iss of Cinchonæ Lancifoliæ in a bottle of Port wine, of which I

drank a wine-glass full, as DE HAEN would say, "Non pondus nec mensura sed morbi levamen regula sit,"* at 8, 9, 10, 11, and 12 o'clock, noon; at 1 and 2, P. M. in all seven glasses full, when I was so much nauseated that I could not finish the bottle, nor did I find any absolute necessity for its continuance, as the expected paroxysm had not returned. Thus was a most decided turn given to the complaint, although the wine seemed to have no other effect than water.

16th. Free from fever. Pulse 60. No medicine.

17th. A slight sensation of chilliness returned about noon on this day, when I drank two tumblers of hot Port wine negus, with spice, which completely carried it off, without heat or perspiration. I now ventured upon animal food, and drank warm wine and water, taking no medicine, and remaining free from fever for fifteen days, until the 3d of October, when another paroxysm was brought on by some cold water suddenly applied to the skin. The fit was, however, not very severe.

4th. Easy.

5th and 7th. Felt more poorly than I did on the alternate days, but no fit.

9th. *At seven o'clock on this morning*, a fit came on whilst I was in bed, preceded by

* Ratio Medendi, 1761.

a hollow and distressing cough. The paroxysm lasted four hours; but the pulse did not exceed 120 strokes in a minute, during the hot fit. Quantities of bile were voided after this attack.

11th. Another fit, which lasted four hours, from eight o'clock until noon.

13th. I had not taken any medicine until the 15th of September, excepting mild laxatives; but I now felt the necessity of doing something, and therefore took an emetic at seven o'clock in the morning, previous to the expected fit, and an hour after its operation a dose of laudanum. I had transitory symptoms, but no decided fit on this morning.

16th. Began Fowler's Solution of Arsenic, in doses of ten drops each, thrice a day, which I continued daily, decreasing the dose gradually to four drops, until the 28th of October, when I quitted Plymouth for Edinburgh. I experienced a paroxysm in the coach from hence to Exeter, and one afterwards; but the farther north I travelled the better I became; and, with the aid of the Liquor Arsenicalis, I reached Scotland very comfortably.

Whilst in Edinburgh, I stated the history of my attack to the late Dr. Gregory, who considered it of sufficient importance to mention in his lectures, as an instance of inter-

mittent fever, incurable by blood-letting.—Although a regular Sangrado, this eminent and venerable Professor* of the Practice of Physic used to mention the case of his own father, who, when a student at Upsal, was attacked with ague. He was the only water-drinker out of a party of twenty-four students; the rest drank wine; he alone was attacked with ague.

The late Dr. LIND† was once prevailed upon to bleed a man with ague, who died: two others were blooded, and also died.

SYDENHAM used to bring out a sweat four or five hours before an expected paroxysm, by a quantity of sage posset.

It is worthy of remark, that I remained in Edinburgh during the chief part of the winter, 1818, and materially recovered my health and strength, without medicine; yet I began to sicken, and to get bilious, on my return to Plymouth in the spring of 1819. So much I would say for the change of air. My health has never been so good since, as it was before that attack.

A navy surgeon, to whom I mentioned

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* I think that Dr. Gregory was nearly the oldest Professor in Europe, having filled a Professor's chair about forty-five years.

† There were two Drs. Lind; I believe Dr. Gregory here alluded to the late Dr. Lind, who was the author of a work on the Remittent Fever of Bengal, published in 1762.

these particulars, informed me that he was once coming down in a vessel from Kent, with some sailors, who had caught an ague on that coast, and that they were all cured on their passage by taking a table-spoonful of sulphur in a glass of brandy, about an hour before the cold fit was expected. This is a no less common than successful practice in the fens of Lincolnshire.

I have mentioned my own case here for the following reasons :—

1. In order to demonstrate the grounds upon which I have offered some reasoning on the subject of fever, of which an intermittent is the best specimen.

2. To shew that a similar collapse took place in two persons at the same time, from the same cause ; how the one was cured, and how the other suffered.

3. To point out the inefficiency of blood-letting, and the power of bark with wine, in arresting the invasions of fever.

OPIUM.

In irritative fever, after the morbid secretions of the stomach, bowels, and skin, have been rectified, provided that much irritability prevail, and that there be not delirium, nor a dry cracked tongue, opium may be given advantageously. Mr. HUNTER's opinion was,

that opium diminished action without giving strength, and certainly we find it of great service in cases of exhaustion and mental disturbance; indeed, opium-eaters cannot well omit it. Therefore, I think that its use may produce much alteration and benefit in this disease, regulated by the observations of the practitioner.

A combination of opium* and bark is supposed to resist the disposition to mortification. Theriacum and Mythridate, containing a mixture of opium and spices, were given by the ancients with this view.

Pott,† in speaking of mortification of the toes and feet, has said that opium in two grain doses night and morning, for three days, and afterwards one grain every fourth hour for six days more, put a stop to the disease. "In nine days from the first administration of the opium, all the tumefaction of the foot and ancle totally subsided, the skin recovered its natural colour, and all the mortified parts plainly began to separate; in another week they were all loose and casting off, the matter was good, and the incarnation florid." Therefore, with bark to give strength, and opium to diminish action, we may effect much good in the treatment of irritative fever.

* See Tralles de usu Opii, 4to. par. 2. p. 57. 1757.

† Vol. 3.—p. 337.

STIMULANTS.

When the constitution sympathises with a local injury, and fever arises, we have already stated that the stomach (the centre of sympathies) is affected with nausea, loathing, sometimes vomiting, anorexia, and a peculiar sinking sensation, which is felt at the scrobiculus cordis, of which we may form some idea by the sensations experienced by us in health, after fatigue in a hot day; and we have already distinguished between this sympathetic affection of the stomach, and the oppression which is experienced by overloading it with indigestible food; the one arising from internal disorder, and the other from external disease, communicated to this viscus through the medium of the nerves or absorbents. We have already shewn this sympathetic affection of the stomach from ulcers, punctures, abrasions, and other local injuries of the simplest kind, as well as from the bites of rabid and poisonous animals. It is a remarkable and a very important fact, to consider how the stomach becomes so much disordered from external impressions. An emetic in this stage might prove highly injurious, because there may be nothing to remove from this organ, and the nervous system might be additionally disturbed by its action.

These are the sensations, which, in my opinion, call for stimuli. The stomach is seldom so affected without a shudder or feeling of chilliness, lassitude, yawning, and other precursory symptoms of commencing fever. Called to a patient in this stage, I should have no hesitation in directing the readiest stimuli, which were at hand, i. e. wine, spirits, porter, laudanum, ammonia, and the like.

Some time since, I was called up at midnight, in a hurry, to a neighbour's child, who had been cutting teeth, and subject to convulsions from the attendant irritation. In one of these fits the child threw himself back in the nurse's arms, and fainted, his lips became livid, both respiration and circulation stopped for many minutes. The child was in appearance gone—asphyxiated. I saw that there was merely a collapse, and that death had not taken place, because the limbs were flexible. Brandy was the first stimulant which occurred to my mind, and therefore we gave the child, I believe, several tea-spoonsful of it. The first action was on the stomach, then on the heart, and subsequently on the whole system, in the manner pointed out by Mr. Brodie.*

* See his Observations in the Philosophical Transactions. Vol 12.

The child recovered, and is doing well to this day. The family surgeon, who was a very intelligent and indefatigable man, called on me the following morning, and remarked that he thought it a very fortunate practice, for he might have been tempted to bleed under such circumstances.

Almost all the quack medicines, used in hot countries, against the bites of venomous animals, have been cordials or stimulants of some kind.

I remember an old man who, perhaps, had treated some scores of patients successfully in this way, after the bite of a viper, and other punctures, by giving previously some brandy, and then anointing the part for a long time with the oil of the viper, and the oil of olives, mixed.

Dr. Duncan, junr., who has balanced the stimulant and the antiphlogistic treatment, with his usual impartiality and judgment, and endeavoured to reconcile the two modes, says—"According to this view of the disease, we should treat those malignant cases, which begin with the symptoms of extreme debility, on the same principles that malignant intermittents are treated during their dangerous cold stages; that is, we should administer diffusible stimuli freely, until the commencement of re-action, when the antiphlogistic treat-

ment should be vigorously enforced."—p. 659. And after commenting on the action of stimuli, remarks—"Similar effects are observed from the use of this highly diffusible stimulus in other affections of the same kind. My own brother, whilst bathing in the sea off Jaggernauth, was stung by some venomous marine animal. His whole body instantly swelled enormously, and he became delirious. No medical assistance being at hand, the fishermen undertook to cure the affection, which was familiar to them, and they effected it by giving large quantities of brandy."†

When the system has been disturbed by the action of a poison, the ancient writers recommended wine and other stimulants.—Celsus writes thus "deinde multo meracoque vino excipiunt, quod omnibus venenis contrarium est."*

AMMONIA.

The different forms of ammonia, in salt, spirit, &c. are often successful in relieving a sinking at the stomach, syncope, or faintness.

The liquor ammoniæ acetatis is an excellent medicine in this case, when the skin or tongue may be too dry to give bark.

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† Medico-Chirurgical Transactions of Edinburgh, vol. 1.—p. 646.

* Lib, 199.

The common use of ammonia for fainting ladies is a sufficient criterion of its efficacy.—I do not think it a medicine capable of giving stamina or tone to the constitution, but merely of producing a temporary exhilaration, for which purpose a glass or two of Champagne wine may be equally serviceable.

Ammonia is a stimulant, an antispasmodic, and a diaphoretic. The ancients supposed that it neutralised an acid, but it produced a sweat, and was therefore recommended.—With the essential oil of cloves and lemons, it forms an aromatic spirit; and with assafætida, or amber, mastich, lavender, and alcohol, its operation is assisted by a combination of their virtues.

Ammonia has been recommended in cases of erysipelas and erythema, by PEART* and others; and also by Dr. RANKEN,† in ʒi. doses every ten minutes, against the bite of the Cobra di Capello.

FONTANA also proposed ammonia, with other stimulants, against the bite of the viper.‡

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* Peart on Erysipelas &c.—1802.—p. 24.

† Edinburgh Medical and Surgical Journal.—Vol. 18.—p. 235.

Also some remarks by Mr. Williams, in the Asiatic Researches, vol. 1.

‡ Sur les poisons et sur le corps animal, 2 tom. 4to.—Florence, 1781. This work has been translated into English, by

Eau de luce was applied externally, and large potions of Madeira wine (two bottles) given internally to an Indian, who had been bitten by a Cobra di Capello. The man recovered under this "*heroic remedy.*"

Sir EVERARD HOME also trusted to ammonia, æther, and camphor, in the treatment of the man, who was bitten by a Rattlesnake.*

Æther and Camphor are also other stimulants and anti-spasmodics; but I wish rather to call the attention of the medical reader to the use of stimulants generally, in the treatment of irritation, than to enumerate any one in particular.

Camphor is very frequently given according to the formula in the Pharmacopœia Londinensis, but very little of it can ever be taken in this mixture, because this essential oil

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Skinner. 2 vols. 8vo. London, 1787. The reader may find many interesting accounts of the bites of the Cobra di Capello, in "An Account of Indian Serpents collected on the Coast of Coromandel, by Patrick Russel." London, 1796. 2 vol. folio.

* Philosophical Transactions of London for the year 1810. p. 75. The reader will find a great deal of useful information, shewing the origin of constitutional irritation from the bites of poisonous reptiles, in a work intitled "Traité des Poisons ou Toxicologie generale, par M. P. Orfila. Paris, 1815." Tom. 2, p. 108, &c.

Also in Dictionnaire d'Hist Nat. Article—Vipere.

swims on the top, and is strained off. Therefore, it may prove a pleasant vehicle, but never ought to be relied on in this shape.

MUSK.

This unctuous substance, which is obtained from the excretory follicles near the umbilicus of the deer, called *moschus moschiferus*, has been lately recommended for the cure of erysipelas and gangrene, in doses of *ten* grains each, with *five* grains of ammonia, joined with aromatic or opiate confection. What antiseptic influence it exerts over the stomach we cannot easily say, but it is generally considered an antispasmodic, and therefore recommended in hysteria, and singultus arising in many diseases.

Singultus is generally the harbinger of death in an advanced stage of irritative fever: in that state musk might be judiciously ordered; but if we wait for this to come on, very little good can be expected, as a patient seldom recovers after the appearance of this formidable symptom.

The moment gangrene occurs in any part, or vibices, or other signs of local or general death, and before hiccough comes on, musk might be fairly tried, with or without opium and ammonia. In an enema it has been known to allay the irritation consequent on dentition

in children, and, therefore, it may be beneficially used in the different stages of irritative fever.

Musk has also been extolled as a remedy against hydrophobia, with or without castor, which is another animal concrete, derived from a species of beaver, and recommended in doses, from *ten* to *thirty* grains, for similar purposes. I might therefore be disposed to try a few doses of musk in conjunction with the plan already pointed out.

BRANDY.

In the erratic form of this fever, after a retrocession from the surface to the interior, I would give brandy frequently, five or six times within the hour; for it is as much the practitioner's object to keep out the cutaneous redness in irritative fever, as it is in the exanthemata, in scarlatina, measles, and small-pox. The old woman's remedy of saffron and brandy owes its virtues, no doubt, to the spirit. Dionis* also recommended brandy and blood-letting at the same time; but here again much discretion is necessary.

In the published Lectures of Sir Astley Cooper, we find the following useful remarks. On the subject of erysipelas, he says—

* Dionis's Surgery.—p 379.—1739.

"In this town the following plan is pursued, and which, for London, undoubtedly is the best:—You at first give calomel for the purpose of restoring the secretions of the liver and intestines; then allow a generous diet, and administer ordinary tonics; or, from what I have witnessed, I would advise you to try the sulphate of quinine; it is a most powerful tonic, excites in the stomach a genial warmth, and often will remain in that organ when bark will not. Dr. Marcet, now deceased, but late a physician of Guy's Hospital, endeavoured to ascertain whether the antiphlogistic or tonic mode of treatment was best for the disease; therefore, he put two persons into adjoining beds, having erysipelas, to one of whom were given tonics and a generous diet; to the other, salines and low diet; blood likewise was abstracted from the latter; they both recovered, the former rapidly, while the latter lingered in a debilitated state for a very considerable period. You will find, where erysipelas attacks the lower orders of this town, who weaken their constitutions by the excessive use of ardent spirits, that gin may be sometimes advantageously employed as a remedy, at once being the evil and its cure. The last two cases of this disease which I saw in the other Hospital, prove the truth of what I am now saying. A man had erysipelas dreadfully severe, his head swollen to an enormous size,

and his recovery, by every person thought impossible. It was discovered, one day, that his wife brought him some gin. He declared that he was better from having drank it, was permitted its continuance, and to the astonishment of all he rapidly got well.—Not six weeks after this, there was another man, similarly circumstanced, brought into the same ward; and having, from the result of the above case, formed a high opinion of gin, I directed the sister to give it here also; and really this patient recovered as speedily as the former."*

DIET.

A great deal may be effected by attending to the patient's mode of living. A desire is sometimes evinced for animal food, which ought generally to be allowed, if an obvious objection does not direct its prohibition. As beverages, I think that porter or bottled ale, to which a spoonful of yeast may be added, very recommendable; also cold brandy and water if preferred; or wines, of which old Medeira and Port may be considered the best.

SEDATIVES.

Not only have stimulants been proposed for the cure of irritative fever, but the most powerful of sedatives, lead, has been lately said to cure a patient of hydrophobia.

* Lancet Vol. 1.—p. 330.

The acetate of lead, common goulard, has been lately tried with success, by Dr. Fayerman, of Norwich, beginning with 35, and increasing to 40, 45, or 50 drops, every hour or two, until paralysis ensue. I refer the reader to his letter in the Journals for the present year.

I believe, now, that I have enumerated a sufficient number of facts to direct the practitioner to that treatment, which will be found most proper and successful in controling irritative fever or erysipelas excited by local injuries, either of the simplest kind or aided by a poison. The constitutional treatment will be very much the same, although the local may differ. After the maturest deliberation, which I have given to the subject, I venture, with deference, to offer the following corollaries, hoping that they will be considered as the only explanations which I can advance, respecting the origin, causes, nature, and treatment of this disease :—

First—That the constitutions of these men had been rendered unusually susceptible of irritation at this time.

Secondly—That diet, air, their occupations, and other circumstances, influencing animal health, had collectively operated in creating this morbid propensity.

Thirdly—That the addition of an external injury, to a susceptible habit of body, formed the disease.

Fourthly—That any kind of local excitement sufficed.

Fifthly—That the local injuries would have proved inadequate to the causation of this disease, in persons not pre-disposed to excitement.

Sixthly—That the disease was not confined to the Artificers of the Royal Naval Yard at Devonport, as erroneously supposed; but was recognized, in detached instances, amongst other people in the neighbourhood.

Seventhly—That the disease was the traumatic erysipelas of some, and the irritative inflammation of other authors.

Eighthly—That its leading character was a tendency to spread, to form sloughs, or unhealthy fluids, and to leap from part to part.

Ninthly—That bleeding, and other depletory measures, proved inadequate to the cure of this disease.

Tenthly—That two cases of recovery arose probably from the restoration of healthy secretions, and the third from the removal of tension by incision.

Eleventhly—Experience has shewn that the object should be, to invite and keep the disease to the surface by local measures.

Twelfthly—That the general treatment ought to be calculated to invigorate and strengthen the constitution, with the view of expelling the aggressions of disease towards the interior.

CONGDON AND HEARLE, PRINTERS, DEVONPORT.